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County Palatine of Chester.

REPORT

OF THE

Medical Officer of Health

FOR THE YEAR 1905,

WITH STATISTICAL INFORMATION AND SUMMARY OF REPORTS OF DISTRICT MEDICAL OFFICERS OF HEALTH.

PRESENTED TO THE

PUBLIC HEALTH COMMITTEE

OF THE COUNTY COUNCIL,

July 13th, 1906.

CHESTER:

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REPORT

OE THE

Medical Officer of Health

For the year ending December 31st, 1905.

To the Public Health Committee of the County Council

of the County Palatine of Chester,

and to the Members of the County Council.

at the date of the Census in 1901 are shown in the following statement :—

	Area in Acres.	Population Census, 1901.
Administrative County and three County Boroughs	654,825	827,191
Deduct—		
County Borough of Birkenhead ...	3,848	110,915
County Borough of Chester ...	2,862	38,309
County Borough of Stockport* ...	2,197	78,897
Administrative County	645,918	599,070

The increase in the population of the Administrative County, since 1891, apart from the County Boroughs, was shewn by the Census of 1901 to be 63,126, or 11·8 per cent.; in the County Boroughs it was 20,896, or 10·1 per cent.

The Census population of the Municipal Boroughs, the other Urban Districts, and the Rural Districts in the Administrative County, and the increase or decrease in the several Boroughs and Districts is conveniently shown in tabular form as follows :—

Municipal Boroughs.	Population Enumerated, 1901.	Increase or Decrease of Population between 1891 and 1901.		Percentage of Increase or Decrease between 1891 and 1901.	
		Increase	Decr'ase	Increase	Decr'ase
Congleton	10707	...	37	...	0.34
Crewe	42074	9300	...	28.37	...
Dukinfield	18929	1544	...	8.88	...
Hyde	32766	2096	...	6.83	...
Macclesfield	34624	...	1385	...	3.84
Stalybridge	27673	890	...	3.32	...
6 Municipal Boroughs	166773	12408	...	8.03	...

* It is convenient to consider Stockport as entirely in Cheshire.

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Other Urban Districts.	Population Enumerated, 1901.	Increase or Decrease of Population between 1891 and 1901.		Percentage of Increase or Decrease between 1891 and 1901.	
		Increase	Decr'ase	Increase	Decr'ase
Alderley Edge	2856	575	...	25.20	...
Alsager	2597	685	...	34.82	...
Altrincham	16831	4391	...	35.29	...
Ashton-upon-Mersey ..	5563	1329	...	31.38	...
Higher Bebington ...	1540	119	...	8.37	...
Lower Bebington ...	8398	3182	..	61.00	...
Bollington	5245	...	90	...	1.68
Bowdon	2788	...	4	..	0.14
Bredbury and Romiley	7107	1286	...	22.09	...
Bromborough ...	1891	151	...	8.67	...
Buglawton	1452	70	...	5.06	...
Cheadle and Gatley ...	10820	2568	...	31.12	...
Hale	4562	1987	...	77.16	...
Hazel Grove & Bramhall	9791	1923	...	24.44	...
Hollingworth ...	2447	...	448	...	15.47
Hoole	5341	1449	...	37.23	...
Hoylake & West Kirby	10911	4366	...	66.70	...
Knutsford	5172	529	...	11.39	...
Lymm	4707	...	288	...	5.76
Marple	5595	751	...	15.50	...
Middlewich	4669	699	..	17.60	...
Mottram	3128	.	142	...	4.34
Nantwich	7722	310	...	4.18	...
Neston and Parkgate ...	4154	577	...	16.13	...
Northwich	17611	2697	...	18.08	...
Runcorn	16491	...	3559	...	17.75
Sale	12088	2444	...	25.86	...
Sandbach	5558	...	266	...	4.57
Tarporley	2644	...	58	....	2.14
Wallasey	53579	20350	...	61.24	...
Wilmslow	7361	1017	...	16.03	...
Winsford	10382	...	58	...	0.55
Yeardsley-cum-Whaley	1487	252	...	20.40	...
33 other Urban Districts	262488	48794	...	22.83	...

Rural Districts.	Population Enumerated 1901.	Increase or Decrease of Population between 1891 and 1901.		Percentage of Increase or Decrease between 1891 and 1901.	
		Increase	Decre'se	Increase	Decre'se
Bucklow	19890	2097	...	11.78	...
Chester	10989	165	...	1.52	...
Congleton	12220	...	285	...	2.33
Disley	2827	567	...	25.08	...
Macclesfield	15775	...	121	...	0.76
Malpas	4488	...	136	...	2.93
Nantwich	23197	285	...	1.24	...
Northwich	22073	1119	...	5.34	...
Runcorn	23244	...	674	...	2.81
Stockport	2288	...	3	...	0.13
Tarvin	12614	...	89	...	0.70
Tintwistle	2105	...	471	...	18.24
Wirral	18099	...	530	...	284
13 Rural Districts...	169809	1924	...	1.14	...

In all cases of change of area between 1891 and 1901, the enumerated population in 1901 is compared with the enumerated population of the new area in 1891.

It is thus seen that the 6 Municipal Boroughs in the Administrative County, taken together, increased in population 8 per cent., although the population of 2 of these Boroughs decreased. This is, as a whole, a small increase for towns. The only Borough in which a really important increase took place in 1891-1901, was Crewe, where the population increased $28\frac{1}{8}$ per cent.

The 33 other Urban Districts, taken together, show an increase in population of nearly 23 per cent. during the decennium, 1891-1901. In 9 of these Districts the population decreased; the decrease in the case of Runcorn being $17\frac{3}{4}$ per cent, and in the case of Hollingworth being about $15\frac{1}{2}$ per cent. However, the remaining 24 Districts all show an increase; and in several of them the increase of population is remarkable. Thus, in Lower Bebington it was 61 per cent., in Wallasey upwards of 61 per cent., in Hoylake and West Kirby upwards of 66 per cent., and in Hale upwards of 77 per cent.

The population of the Rural Districts, taken together, increased little more than 1 per cent. in the decennium, 1891-1901.

In Bucklow the increase was 11¾ per cent., and in Disley 25 per cent. Still, of the 13 Rural Districts, 8 decreased in population during the decennium; the decrease in the case of Tintwistle being upwards of 18 per cent.

Population at Midsummer, 1905.—The population of the Administrative County as enumerated at the taking of the Census on April 1st, 1901, was, therefore, 599,070, and it was distributed as follows :—

6	Municipal Boroughs	166,773
33	other Urban Districts	262,488
13	Rural Districts	169,809

On November 9th, 1901, the Civil Parish and County Borough of Stockport was extended to include (1) part of the Civil Parish of Brinnington (Census population, 404), in Stockport Rural District, (2) part of the Civil Parish of Bredbury and Urban District of Bredbury and Romiley (Census population, 20), also (3) part of the Civil Parish of Cheadle and Urban District of Cheadle and Gatley (Census population, 2,904), and (4) part of the Civil Parish of Hazel Grove-cum-Bramhall and Urban District of Hazel Grove and Bramhall (Census population, 1857).

On April 1st, 1902, the Civil Parish of Compstall (Census population, 875) ceased to belong to Stockport Rural District, and became an Urban District. On the same day, the Civil Parish of Whitby (Census population, 4,082) ceased to belong to Wirral Rural District, and became Ellesmere Port and Whitby Urban District.

Thus, the population of the Administrative County of Chester was, owing to extension of Stockport County Borough, reduced by 5,185 persons—that is 4,781 persons from 3 Urban Districts, and 404 persons from a Rural District. The formation of 2 new Urban Districts has still further reduced the population of the Rural Districts by 4,957, this number of persons being transferred to the Urban Districts.

On September 19th, 1902, Stockport Rural District was again reduced, the part of the Civil Parish of Brinnington (Census population 98), yet belonging to Stockport Rural District, being transferred to Bredbury and Romiley Urban District.

All that remained in Stockport Rural District in 1903 was the Civil Parish of Handforth. This obtained Urban powers as the Urban District of Handforth in September, 1904. The formation of this new District reduced the population of the Rural Districts by 911, this number of persons being transferred to the Urban Districts.

The Census population of the area representing the Administrative County, in the middle of the year 1905, was therefore 593,885, and it is distributed as follows :—

6 Municipal Boroughs	166,773
36 other Urban Districts	263,673
12 Rural Districts	163,439

The population of the Administrative County in the middle of the year 1905, is estimated to have been 629,217, distributed as follows :—

6 Municipal Boroughs	173,911
36 other Urban Districts	285,265
12 Rural Districts	169,941

Estimates of population in the several Boroughs and Districts are made by the Medical Officers of Health. It will be observed that many Medical Officers of Health do not consider that the local population increased at all between April 1st, 1901, and Midsummer, 1904. Certainly, the estimates taken together (35,332) for four years and three months on a population of 593,885, is not excessive.

Area and Density of Population.—The area of the Districts in the Administrative County amounts to 644,180 acres. At the date of the Census this area was 645,918 acres, and it was thus distributed :—

6 Municipal Boroughs	15,587 acres
33 other Urban Districts	79,419 ,,
13 Rural Districts	550,912 ,,

However, owing to the extension of the County Borough of Stockport, 196 acres were lost to Stockport Rural District, 192 acres were lost to Bredbury and Romiley Urban District, 726 acres were lost to Cheadle and Gatley Urban District, and 624 acres were lost to Hazel Grove and Bramhall Urban District; while 1,738 acres were lost to the Administrative County. Owing to Compstall (903 acres) having been made an Urban District, and to Ellesmere Port and Whitby (1261 acres) having been made an Urban District, Handforth (1312 acres) having been made an Urban District, and to part of Brinnington (451 acres) having been taken from Stockport Rural District and given to Bredbury and Romiley Urban District, 3,927 acres were transferred from the Rural Districts to the Urban Districts. The area of the Districts in the Administrative County, in the middle of the year 1905, has been therefore thus distributed :—

6 Municipal Boroughs	15,587 acres
36 other Urban Districts	81,805 ,,
12 Rural Districts	546,788 ,,

Thus, in the whole Administrative County there is less than one (0.97) person to an acre. In the 6 Municipal Boroughs, taken together, there were 11.15 persons to an acre. In the 36 other Urban Districts, taken together, there were 3.48 persons to an acre. In the 12 Rural Districts, taken together, the proportion is 0.31 to an acre. The great difference in the density of population is very marked in the various Districts. Thus, in the Altrincham Urban District there are nearly 27 persons to an acre, in Crewe upwards of 21 persons to an acre, in Wallasey upwards of 17 persons to an acre, and in Hoole upwards of 16 persons to an acre, while in many Rural Districts there is but 1 person to several acres.

Marriages.—Reference to the number of marriages used to be made in two or three Reports. In the Reports for 1905, the matter appears to be referred to once only.

At Crewe the marriage rate (the number of persons married during the year per 1,000 living) was 11.2 in 1905.

In the eight years, 1897-1904, the Crewe marriage-rate averaged 13.66. The local marriage-rate is always interesting, and might have been given more frequently in Medical Officers' Annual Reports.

Births.—The number of births registered in the Administrative County in 1905, was 15,535. The birth-rate was, therefore 24.7 per 1,000 living, which is so low that it compares unfavourably with the low County birth-rate (26.3) in 1904. The birth-rates per 1,000 living were in some few instances fairly high, and in many instances very low. It will be seen, in Table 1, that at Buglawton the birth-rate was 35.1, at Lower Bebington 35.0, at Middlewich 34.4, at Ellesmere Port and Whitby 33.8, and at Higher Bebington 33.4, whereas at Bowdon the birth-rate was only 9.6 per 1,000 living. The birth-rate in the Municipal Boroughs was 24.4 per 1,000, in the other Urban Districts 25.7, in the Rural Districts 23.3, and in the Administrative County 24.7. In the whole of England and Wales the birth-rate for 1905 was 27.2 per 1,000 of the population, which is 0.7 per 1,000 below the rate in 1904, and lower than the rate in any other year on record. Compared with the average in the ten years, 1895-1904, the birth-rate in 1905 shows a decrease of 1.8 per 1,000. The birth-rate in the 76 great towns in England and Wales (representing in the aggregate a population of 15,609,377) was 28.2.

Thus, during 1905, the birth-rate in Cheshire was 2.5 below the unprecedentedly low birth-rate of the whole country.

Deaths.—The number of deaths registered in the Administrative County in 1905 (excluding the deaths of persons not belonging thereto, and including the deaths of persons registered elsewhere belonging to the County) was 8,697. The death-rate was, therefore, 13.8 per 1,000 living. The natural increase to the population (excess of births over deaths) during 1905, was 6,838. This compares favourably with the natural increase of 6,480 in 1904, or 6,321 in 1901; but does not compare favourably with the natural increase of 7,689 in 1903, or 7,101 in 1902. There is a considerable difference in the death-rates of the different districts. They range from 19.2 in Buglawton, 18.9 in Higher Bebington, 18.1 in the Borough of Macclesfield, and 17.8 in the Borough of Hyde, to 9.6 at Hale, 9.2 at Hollingworth, and 6.8 at Bowdon. The death-rate in the Municipal Boroughs was 16.4, in the other Urban Districts 12.9, in the Rural Districts 12.6, and in the Administrative County 13.8. In the whole of England and Wales the death-rate for 1905 was 15.2 per 1,000 of the population, which is 1.0 per 1,000 below the rate in 1904, and lower than the rate in any other year on record. Compared with the average rate in the ten years, 1895-1904, the death-rate in 1905 shows a decrease of 2.0 per 1,000. The death-rate of the 76 great towns in England and Wales (representing in the aggregate a population of 15,609,377) was 15.7.

Thus, during 1905 the death-rate in Cheshire was 1.4 below the unprecedentedly low death-rate of the whole country. During 1905 the death-rate in the Cheshire Boroughs was 0.7 above the death-rate in the 76 great towns in England and Wales.

Infant Mortality.—A ready method of estimating the relative prevalence of infant mortality is by calculating the proportion of deaths under one year of age to each 1,000 of registered births. Here, again, great differences were recorded in different districts during 1905. The proportion was very large in Buglawton Urban District (254 per 1,000), in the Borough of Dukinfield (196 per 1,000), in the Borough of Hyde (191 per 1,000), in the Borough of Congleton (184 per 1,000), and in the Borough of Stalybridge (177 per 1,000). In some Urban Districts, as in Alderley Edge (16 per 1,000), in Bowdon (37 per 1,000), and in Tarporley (49 per 1,000), the proportion was exceptionally low. The proportion in the Municipal Boroughs was 162 per 1,000, in the other Urban Districts 107 per 1,000, in the Rural Districts 95 per 1,000, and in the Administrative County 119 per 1,000. The proportion during 1905, in

the whole of England and Wales was 128 per 1,000 births, and in the 76 great towns taken together in England and Wales (representing in the aggregate a population of 15,609,377) the proportion was 140 per 1,000 births.

Thus, in the year under review, the proportion of infants who died in Cheshire was 9 per 1,000 births less than in the whole country, and the proportion of infants who died in the Cheshire Municipal Boroughs was 22 per 1,000 births more than in the 76 great towns in the kingdom. This is a fair record as regards the whole County, but it is a decidedly bad record as regards the Cheshire Municipal Boroughs.

The variation in weather conditions, and the incidence of epidemics, influence the general death-rate from year to year, and, as surely, increase or decrease the mortality among infants. However, the question to be considered for the whole of England and Wales, and for every County is not—Why did the infant-mortality rate rise in one year or fall in another year? but, Why is the infant-mortality rate always high in certain districts? The infant-mortality-rate being high in a particular year may be due to the incidence of sun and rain, the passing of a wave of epidemics, and such recondite causes: but the infant-mortality rate being high year after year in some special district, or part of a district, is not to be explained in this ready way, so that no one can be made responsible. A high infant-mortality rate, maintained year after year in any district, must be due to local insanitary conditions in that district, which it behoves the Local Authority to discover and remove.

The inquiry of practical importance is therefore—Which are the districts in Cheshire where a high rate of infant-mortality is maintained? The answer is obvious, and indeed has been given in previous Annual Reports. In 1905 it happened that the highest rates of infant-mortality were recorded in the following sanitary districts:—

	Deaths of Infants per 1,000 births.
Buglawton Urban District	254
Borough of Dukinfield	196
Borough of Hyde	191
Tintwistle Rural District	187
Borough of Congleton	184
Borough of Stalybridge	177
Compstall Urban District	173
Marple Urban District	151
Borough of Macclesfield	149
Nantwich Urban District	147

The high rate of infant-mortality at Buglawton was in part due to the prevalence of measles and whooping-cough, and bronchitis and pneumonia associated therewith. It was also largely due to 5 deaths of infants prematurely born. There is no great significance in the high rate recorded at Tintwistle, as it was due to the occurrence of four deaths of twin born infants, who lived only a few days, and the death of an immature child who lived only five hours. Of little significance also is the high record in Compstall, where the whole population is only 880. The whole number of infants who died during the year was 4, and of these one died from premature birth, and the other from debility when less than a week old. The infant-mortality-rate being high at Marple appears due to two deaths from premature birth, and six deaths from measles, bronchitis, or pneumonia. The infant mortality being high in Nantwich Urban District, is, in part, due to the prevalence of diarrhœa and enteritis, which were the cause of nine deaths, and to 12 deaths from debility. Here also there were two deaths ascribed to premature birth.

The remaining five sanitary districts in which a high rate of mortality obtained are the five Municipal Boroughs, which in past years have so frequently had a bad record in this respect. In 1905 the highest infant mortality recorded in the County was in the Borough of Dukinfield. In 1904 it was even higher than in 1905, the number in these two years being respectively 198 and 196, and in 1902 and 1903 the numbers were respectively 184 and 194. During the last four years, therefore, the infant death-rate has shown no tendency to decrease. However, the records in 1902-1905 show considerable improvement on the ten years 1892-1901, when the annual number of deaths of infants was equal to 228 per 1,000 births. In the Borough of Hyde the rate of infant mortality in 1905 was not as high as in 1904 (198), but higher than in 1903 (173), and in 1902 (186). But here also the records in 1902-1905 show considerable improvement on the ten years, 1892-1901, when the annual number of deaths of infants was equal to 209 per 1,000 births.

The high rate of infant mortality recorded in the Borough of Congleton during 1904 (190), and 1905 (184), is exceptional, though a rate equal to that of 1904 was reached in 1901. In the ten years, 1894-1903, the proportion of infants who died averaged only 137 per 1,000 births. In 1905 there were 14 of the deaths due to premature birth, 7 due to bronchitis or pneumonia, and 3 to overlaying. In 1904 there were 16 of the deaths due to premature birth, 7 to

tubercular disease, and 7 to diarrhœa or enteritis. In 1901 the high rate of infant mortality was mainly due to the prevalence of diarrhœa and enteritis.

The number of deaths of infants in Stalybridge was equal to 210 per 1,000 births in 1904, with which the record for 1905 (177) compares favourably. In 1905, there were 14 of the deaths due to enteritis, 13 to premature birth, 22 to atrophy and debility, 19 to convulsions, and 19 to bronchitis or pneumonia. In 1904 this death-rate being so remarkably high was partly due to an epidemic of measles, the registered cause of 17 deaths, and partly to 21 deaths ascribed to bronchitis or pneumonia, diseases which often follow measles. There were also 12 deaths from diarrhœa, and 16 from enteritis. However, 210 infants dying in the first year out of each 1,000 born is a very large proportion in any year. The proportion in the ten years, 1894-1903, averaged 206 per 1,000 born. On many occasions during 1904 and 1905 the subject was considered by the Sanitary Committee. In his Report for 1904 the Medical Officer of Health printed a copy of a handbill on the Management and Feeding of Infants, which by the direction of the Sanitary Committee is given by the Registrar to each person registering a birth.

The Borough of Macclesfield is one of the Districts where a high infant-mortality rate has been recorded for years. Happily in 1905 the number of deaths of infants was only equal to 149 per 1,000 births. In this Borough the rate of infant-mortality varies much from year to year. In the ten years, 1892-1901, this death-rate was equal to 181 per 1,000 births. In 1902 it suddenly fell to 102, and in 1903 it was only 134. In 1904, the infant-mortality recorded was 178 per 1,000 births, that is nearly equal to the old average. The Medical Officer of Health has noticed that the infant-mortality increases in the warm weather, and that it is mainly due to conditions which favour the growth of such micro-organisms as cause putrefaction in infant foods. The reduction in 1902 was felt to be phenomenal, and the record for 1903 being as low as it was compared with the local average was doubtless also mainly due to a cool summer and other conditions beyond control. He appeals, as he did in his last three Annual Reports, to all interested in the welfare of child-life to support a Ladies' Public Health Society, which has been established by the ladies of Macclesfield, to visit the house where a baby is born, and take a kindly interest in the new arrival, directing the mother as to the care, feeding, and management of the infant, and the necessity for cleanly surroundings.

There are, therefore, three Districts (all Boroughs) again reporting high rates of infant-mortality, which have been mentioned in many previous Annual Reports, as recording the highest infant-mortality rates. It may be interesting to inquire as to what steps were taken to bring about the reduction manifest when the record of 1902-1905 is compared with the record of 1892-1901.

In the Borough of Dukinfield the cause of the prevalence of so high a death-rate among infants has been fully discussed, and the Medical Officer of Health prepared a special Report upon the subject, a printed copy of which was kindly supplied to every Member of the County Council. The conditions under which the local community live admit of improvement in many directions. Here is the open ashpit-privy taking up a portion of the very limited space in the domestic back yard of many a home; and in this receptacle rubbish, decomposing animal and vegetable house refuse and human excreta are carefully stored. For other houses pail-closets are provided, but this is merely another arrangement for storing excreta close to dwelling-houses, though the amount stored is not so great and the receptacles are more frequently emptied. For yet other houses water-closets are provided, which it is at least satisfactory to note are no longer discharged into the river. In this town there is no destructor for the cremation of objectionable refuse; there is no apparatus for the disinfection of infected bedding by steam, and there is no hospital for the isolation of infectious cases. Then, the employment of the workpeople in the District at cotton mills, coal pits, and spindle works, etc., is not favourable to a high standard of health for parents and young people.

The Medical Officer of Health draws attention to the much reduced mortality in 1903, which is so far satisfactory, but he thinks that the cause of the high infant-mortality in the Borough is not yet grappled with. Of late he has been doing his best to get exact information in every case. On the death of a child under a year old, the house is visited, and enquiries are made as to (1) the sanitary condition of the premises, (2) the employment of the mother, and (3) how the child was fed. Getting full information, and making such improvements as this information suggests appears to be all that has been done.

In the Report from the Borough of Hyde, the Medical Officer of Health states "that it is the duty of the Sanitary Authority to make some effort to diminish this preventable waste of life which takes place from year to year." In his

opinion the most important factor in causing the abnormally high death-rates is the ignorance of mothers, and those having charge of young children, of the proper method of feeding and managing them. He has made arrangements that, in future, immediately after the death of each infant a full investigation into the circumstances will be made. "Bad hygienic conditions are also most potent factors; infants kept in a dirty condition, and surrounded by dirt, cannot thrive and be healthy." The influence of insanitary conditions, he points out, is shown by the infant-mortality rate being much higher in the Township of Hyde than in Newton or Godley. "The employment of mothers in factories and workshops is responsible for some of the deaths certified as due to debility, a few weeks after birth." Attention is drawn to the Deputation from the County Council who visited Hyde, in 1901, to confer with the Sanitary Committee of the Borough relative to the steps necessary to be taken to reduce the infant-mortality. The recommendations subsequently received from the County Council are quoted, so far as they relate to Hyde, by the Medical Officer of Health in his Report, and he most earnestly endorses them. As a result of the receipt of these recommendations a Female Sanitary Inspector was appointed, but she has since resigned.

In the Report from the Borough of Stalybridge, the cause of the prevalence of so high a death-rate among infants is not explained, but it is noted that this death-rate was not high (100 per 1,000 births) in Millbrook Ward in 1904, and that in this Ward is not high ordinarily. So long ago as 1899, the Sanitary Committee, recognising that the high death-rate among infants was largely dependent on improper feeding and unskilled management, issued a paper of instructions on the management and feeding of infants, and distributed it. In the Reports for 1900, 1901, and 1902, it was not stated that anything further had been done. In the Report for 1903 it is stated that the Town Council have accepted a tender to erect a destructor, and that plans and specifications for this are being prepared, and when ready will be sent to the Local Government Board, with an application for sanction to borrow the money required for its erection. It is also stated that the Sanitary Committee have decided to build a small disinfecting house to hold a steam disinfector, and a bath-room, to afford facilities for the thorough disinfection of persons exposed to infectious disease and their clothing. Difficulties seem to have arisen in carrying out these plans, for neither the destructor nor the disinfecting house were erected at the close of 1905. Even when the destructor and disinfecting house are provided, something further will certainly be needed.

Steps should be taken for the conversion of the midden-privies which exist so extensively in this Borough, for the improvement of the condition of the River Tame, which for a number of years has been "little better than an open sewer." A hospital for the isolation of infectious patients who cannot be isolated at home, is also required. As there are large factories for cotton spinning, etc., in Stalybridge, employing young married women, this Corporation would do well to do what St. Helens has done, and provide working mothers with humanized and sterilized milk for their infants.

The reduction in the infant-mortality rate in these three Boroughs, during three years, does not therefore appear to be due to any very exceptional action taken by the Borough Authorities. Instituting inquiries with reference to the death of every infant is, no doubt, very useful, and will make parents and guardians more careful; giving instruction as to the feeding of infants must also do good, and so must the putting in order of insanitary premises. The reduced mortality among infants in these Boroughs must be largely due to causes which reduced the infant-mortality all over the country of late.

In 1905, Crewe was the only Borough in the Administrative County where the infant-mortality rate was fairly low (131). The rate varies considerably from year to year. In 1904 it was high (160), in 1903 it was 145, in 1902 it was 132, and in 1901 it was 181. In the ten years, 1894-1903, this death-rate averaged 152 per 1,000 births. The Medical Officer of Health remarks that the principal causes of a high infant-mortality in Crewe are apparently (1) ignorance on the part of mothers as to the proper methods of infant feeding and management, and (2) insanitary conditions of the home and its environment. Employment of married women in factories, with its resulting early weaning and hand-feeding, is not a cause of any importance in increasing infant-mortality at Crewe. In his opinion "the remedy lies largely in the education of the present generation of mothers by means of visits from Sanitary Inspectors (preferably Female Inspectors), the distribution of instructions as to feeding, etc., by the Registrar whenever a birth is registered, and also by courses of instruction in elementary hygiene and the feeding of infants, given to girls before leaving school. The Inspector of the Society for the Prevention of Cruelty to Children has given the Crewe Sanitary Authority much assistance by the supervision of a number of children suffering from neglect.

Nantwich, and Bredbury and Romiley, and some other Urban Districts, and Bucklow Rural District, arrange for the systematic distribution of tracts on the feeding and management of infants.

The Medical Officer of Health for Northwich Urban District (where the infant-mortality rate was 162 per 1,000 births in 1904, and averaged 179 in the ten years, 1894-1903), ventures to advance an opinion somewhat different from others. He thinks it unwise to assume that ignorance of parents is the main cause of a high rate of infant mortality; for in Rural Districts this mortality is much lower than in Urban Districts, yet townsfolk are as a rule better educated and have greater facilities for getting help and advice. He points out that the struggle for existence is keener in towns, and that town infants are often ill-provided with fresh air and sunlight, because rents are cheapest in the more crowded courts and alleys. "Soothing syrup" and "Mother's friend" (narcotics injurious to infants) are more largely made use of by town parents. An infant is more in the way and more costly in town than in the country, and unless some relaxation be made as regards taxation in favour of the man with a family, children will be less cared for. Strong drink, too, seems to paralyse the home life more in towns than in villages. Lastly, there is the poor supply (both in quality and quantity) of milk in towns.

Many Medical Officers of Health point out that greater prominence should be given in the elementary schools to the systematic teaching of personal and domestic hygiene; and that for those who have left school and become householders, a little instruction from lady-visitors who are mothers themselves will accomplish much.

To sum up briefly, it may be said that the main causes of a high rate of infant-mortality are :—

1. The employment in factories of those about to become mothers, and those who have been recently confined and should be nourishing their infants.

2. The infants of factory-employed mothers being badly cared for, and ill-fed during the absence of their mothers at work.

3. The environment of the infant being insanitary owing to the system of storing garbage and filth close to the house, and the absence of proper paving of yards leading to soil pollution.

4. There being no provision for isolating infectious children or disinfecting infectious bedding, etc.

5. The ignorance common among working women as to how an infant should be fed, clothed and managed.

Facts as to Infant-Mortality.—With the Official Memorandum as to Annual Reports of Medical Officers of Health, issued by the Medical Officer of the Local Government Board, and dated November, 1905, is a new form (Table V.) for recording facts as to infant-mortality. The form has to be filled in and appended to the Annual Reports of all Medical Officers of Health. In the Memorandum is the following reference to this form :—

"Table V. affords opportunity for record in detail of "facts as to infant-mortality. It is well known that in many "parts of this country the infantile death-rate remains unduly "high ; that it differs widely in districts the circumstances of "which are not definitely dissimilar ; and that within the "limits of a given sanitary area this death-rate may exhibit "striking diversities. Not a few Medical Officers of Health, "in their annual reports—more particularly in reports for "recent years—have dealt in detail with this subject, thus "making important contributions to better understanding "of conditions which conduce to infant-mortality. Never- "theless, statistics available in this connexion do not afford, "except in a broad and general way, satisfactory bases for "comparison of district with district, nor, indeed, always "for useful contrast of different sections of the same "district.

"A table of the sort now prepared permits record in "regard of each sanitary district as a whole (as also in "respect to each of particular sub-divisions of his district "which the Medical Officer of Health may select for com- "parison) of certain facts as to infant-mortality in each of "the several weeks of the first month of life and in subse- "quent months ; facts which, when accumulated for a series "of years, may prove of definite value in instituting com- "parisons such as have been referred to. In the text of his "annual report, the Medical Officer of Health will, no doubt, "comment on the facts that he has recorded in his table or "tables, offering, at the same time, observations on the con- "ditions which, in his view, have mainly contributed to any "special infant-mortalities witnessed, and giving account of "any measures adopted to ameliorate those conditions "regarded by him as especially hostile to infant life. In so "far as modification of procedure for the purpose, or of law

"in facilitating such modification, is in his opinion necessary, "the Medical Officer of Health is invited to state his views.

"It is not proposed that report on the above lines be "limited to districts exhibiting unduly high infantile death- "rates. Data are desirable respecting districts low in the "scale of infant-mortality, with comment by the Medical "Officer of Health on the facts that he is recording, and "indication of the conditions which, in his view, have princi- "pally conduced in his district to comparatively insignificant "infantile death-rate.

"Additional copies of Table V. form can be obtained on "application to the Board by Medical Officers of Health."

Memorandum on the Feeding, Care, and Manage- ment of Young Children.—During 1900, with a view of giving information on the above subject, the County Medical Officer of Health was instructed by the Public Health Committee to draft a leaflet for the instruction of the elder girls in Elementary Schools, and of mothers, and others having the care of young children. A leaflet was accordingly prepared and has been largely circulated. It was printed in full in the Annual Report for 1900.

Recommendations of Committee on Infant Mor- tality.—The Sub-Committee of the Public Health Committee of the County Council appointed to confer with Representatives appointed by the Corporations of Dukinfield, Hyde and Stalybridge, on the subject of the high infant-mortality within their respective Boroughs, held conferences in the Summer and Autumn of 1901, at Dukinfield, Hyde, and Stalybridge. This Sub-Committee subsequently reported that, having carefully considered that statements of the County Medical Officer in his Annual Reports as to the high rate of infant-mortality prevailing in the Municipal Boroughs of Stalybridge, Hyde, and Dukinfield, listened to statements and explanations from the District Medical Officers of Health and Representatives of the several Town Councils, and having been shown several workmen's dwelling-houses, sanitary and insanitary, besides other objects of interest from a sanitary point of view in the several Boroughs, they are satisfied that the Town Councils of the several Boroughs named are anxious to reduce the high death-rate among infants within their respective Boroughs, and while admitting that a great deal has been done with this object, they submit that it is only by a strict enforcement of all the powers possessed by the Corporations under the Public Health and other Acts, that any appreciable reduction in such death-rate is likely to result, and they accordingly recommend for the consideration of the Town Councils of the said Boroughs :—

1. That full information be obtained with reference to every infant whose death takes place before it has completed its first year, as in this way only can the actual facts as regards infantile mortality and its causes be ascertained. The kind of information needed is shown in the particulars, submitted by the Medical Officer of Health for Dukinfield, as to the deaths of infants under a year old from March to August, 1901. (Vide Table VI., Dr. Park's pamphlet of "Information and Statistics").

2. That having regard to Sec. 61 of the Factory and Workshop Act, 1901, the Borough Authorities would do well to enquire from time to time whether proper steps are taken by the Managers of local factories employing women to ensure that no woman or girl is permitted to begin or resume work in any of the said factories for at least one month after giving birth to an infant.

3. That the Town Councils of Stalybridge and Hyde should well consider the advantages of opening a depôt in each Borough, for the preparation and sale at a cheap rate, of humanized and sterilized milk, put up in bottles containing one meal each. Such depôts have been opened at St. Helens and Dukinfield,* and with marked success in Liverpool.

4. That as the amount of yard space in the rear of many dwelling-houses in each of the three Boroughs is obviously too small, and could only have been allowed, through building bye-laws which are not up to date being in force, the Borough Authorities should take steps to make building bye-laws the provisions of which shall be generally in accord with the model bye-laws issued by the Local Government Board.

5. That as the storage of garbage and filth close to dwelling-houses is obviously insanitary, the Borough Authorities should take steps to obtain the conversion of privies into closets, flushed with clean water from separate service cisterns, and the getting rid of ashpits, providing in the place thereof galvanized iron ashbins with tightfitting covers.

6. That the Borough of Stalybridge and Dukinfield should make proper provision for the isolation of infectious persons, the disinfection by steam of infectious bedding, and the cremation of refuse calculated to infect or pollute the air.

7. That as there is great ignorance among working women as to how infants and young children should be fed,

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* In June, 1900, the Corporation of Dukinfield opened a depôt for the sale at a cheap rate (2½d. for 9 bottles per day) of milk, prepared to imitate as nearly as possible mother's milk, and then sterilized, but the depôt remained open only eighteen months. The Medical Officer of Health regrets that it was found necessary to close it. Such a depôt is of great use if properly managed and conducted. Mothers did not avail themselves of this aid to feeding their infants with the enthusiasm expected.

clothed, and managed, and as to the urgent need for cleanliness, the distribution of handbills and pamphlets among them being not alone sufficient to remove such ignorance, each Borough Authority would do well to consider the expediency of appointing a Female Sanitary Inspector (one who has given evidence of her qualification) to visit the houses of the poor, under the direction of the Medical Officer of Health, and instruct them as regards the management of infants and young children, and generally in all matters relating to domestic hygiene.

The Sub-Committee, in conclusion, expressed the hope that as a result of the Conferences some good will be accomplished in reducing the high infant mortality in these Boroughs.

As bearing upon the subject of infant mortality, an Act of some importance, passed in 1897, may be referred to.

The Infant Life Protection Act, 1897.—This enactment, to amend the law for the better protection of infant life, is practically identical with the Earl of Denbigh's Bill of 1896, as amended by the Select Committee of the House of Lords. Section 2 provides that "any person retaining or receiving for hire or reward in that behalf more than one infant under the age of five years for the purpose of nursing or maintaining such infants apart from their parents for a longer period than forty-eight hours, shall within the said forty-eight hours give notice thereof to the Local Authority," that is: in the County of London to the London County Council, in the City of London to the Common Council; in other places in England to the Board of Guardians; in Scotland to the Parish Council; and in Ireland to the Board of Guardians. It is made the duty of the Local Authority to provide for the execution of the Act within its district, and for that purpose to make enquiries from time to time. Local Authorities are empowered to appoint Male or Female Inspectors to enforce the Act, and they are to fix the number of infants under five years which may be retained or received in any dwelling. This Act came into force in January 1st, 1898.

Illegitimate Infants.—The number of those born who were illegitimate is stated in several Reports, and the proportion varied considerably. In Middlewich Urban District 6.6 per cent. of those born were illegitimate. In Knutsford Urban District and Winsford Urban District nearly 6 per cent. of those born were illegitimate. In Northwich Urban District 4.2 per cent., and in the Borough of Congleton 4 8 per cent. were illegitimate. In Bucklow Rural District the proportion was 3 per cent., and in the Borough of Crewe the proportion was 2.9 per cent. None of these records can be considered very high. It is in some districts difficult to compute the exact proportion, so many of the

illegitimate births take place in workhouses. In a few Reports the deaths of illegitimate infants are taken out separately. Such information, enabling one to compare the mortality of illegitimate infants with the mortality of those born in wedlock, is of considerable interest. Thus, in Winsford 22 per cent. of the illegitimate children died within the year and 11 per cent. of the legitimate; and in Middlewich 27 per cent. of the illegitimate children died within the year and 11 per cent. of the legitimate. However, in Knutsford none of the 7 illegitimate children died within the year, and 10.2 of the legitimate children died. Generally the numbers are too small for deductions to be safely drawn from them.

Still-born Children.—There is only one reference to still-born children. In the Report for the Borough of Crewe it is briefly stated that the number of still-born infants brought to the cemetery to be buried in 1905 was 69, and in 1904 was 75, and that in the fourteen years, 1890-1903, a number ranging from 30 to 86 were annually brought for burial. Thus the still-born were equal to 5.2 per cent. of the births registered in Crewe in 1904 and 1905: in the fourteen years, 1890-1903, they were equal to 4.4 per cent. About 4 per cent. of births are still, ordinarily. The reason why so little information is given under this head is because still-births are not required to be registered, as they are in some countries. The still-born are not officially recognised, and anyone may bring the little body to a local sexton, usually with a certificate from a midwife or nurse stating that it was still-born, and have it interred in some informal manner as the sexton may think fit. This is not quite safe or seemly; and for the better protection of infant life it is desirable that every birth—still or quick—should be subject to compulsory registration. Though any person who buries the body of a deceased child as if it were still-born is liable, on conviction, to a penalty of £10, under the present system there appears to be nothing to prevent an infant who has lived a few minutes or a few hours being clandestinely conveyed to a nameless grave without the cause of death being certified or inquired into. It is also obvious that through there being no register for still-births concealment of birth is facilitated.

Mortality among Old People.—The proportion of old people among those who died in 1905, was fairly large, thus shewing that a considerable percentage of the population attained a ripe age before death removes them. Out of the 8,697 deaths in the Administrative County of Chester in 1905, no less than 2,469 were of persons 65 years old and upwards, that is 28.4 per cent., which compares favorably with 26.9 per cent. in 1904, and 26.75 per cent. in 1903. During 1905 the proportion was 24.6

per cent. in the Municipal Boroughs, 26.8 per cent. in the other Urban Districts, and 36.2 per cent. in the Rural Districts.

It will be noticed that while the infant-mortality is highest in the Municipal Boroughs and lowest in the Rural Districts, the mortality among old people is highest in the Rural Districts, and lowest in the Municipal Boroughs.

Uncertified Deaths.—The Deaths not certified by a qualified Medical Practitioner or made the subject of judicial inquiries before a Coroner are ordinarily indicated on the Registrar's returns, but in only a few Annual Reports is there any reference to the matter, except to the uncertified deaths of infants. In the few Districts where information is given under this head, the figures recorded appear to indicate that the proportion of uncertified deaths in the County is small. In Knutsford there have been no uncertified deaths since 1900. In Middlewich there were two in 1905 and none in 1904. In Winsford there were four in 1905 and none in 1904. In Bucklow Rural District there were no uncertified deaths in 1905 or 1904. Even in the Municipal Boroughs the number of uncertified deaths has been usually very small. In Crewe there were only three in 1905 and three in 1904. It would be well if all Medical Officers of Health in the County would note all cases of death not certified by Registered Medical Practitioner and Coroner.

Coroners' Inquests.—In comparatively few of the Annual Reports are particulars as to Coroners' Inquests held during the year. In the Borough of Crewe, 5.4 per cent. of the deaths were referred to the Coroner and inquests held thereon. At the Borough of Hyde in 8.7 per cent. of the deaths inquests were held. At Knutsford in 12.1 per cent. of the deaths inquests were held. At Middlewich in 6.4 per cent. of the deaths inquests were held. At Winsford in 4.5 per cent. of the deaths belonging to the District inquests were held. Of the deaths registered in England and Wales in recent years there were from 6 to 7 per cent. in which inquests were held. As verdicts of the Coroners' Juries are ordinarily entered in the Registrar's returns, such information as is available might appropriately be included in their Annual Reports, by all Medical Officers of Health in the County. Except as regards deaths due to injuries, the official inquiry is little worth recording. Such verdicts as "Found dead," "Death by visitation of God," "Natural causes," and "Probably syncope," are not precise enough to be of use for purposes of classification.

Zymotic Diseases.—The 7 principal zymotic diseases are small-pox, measles, scarlet fever, diphtheria, whooping-cough, fever, and diarrhœa, yet when the term "principal

zymotics" is used, it is not always understood in the same sense. Some Medical Officers of Health include under the heading "diphtheria" all deaths registered as croup; others, deaths registered as diphtheria only. Again, some Medical Officers of Health include under the heading "fever," typhus, enteric, or typhoid, continued, relapsing, and puerperal fevers; others include the first four only, or the first three only. The wise course is to follow the practise adopted in making up the Registrar General's returns. In these summaries croup is included with diphtheria, except of course spasmodic croup, and the term "fever" includes typhus, enteric, simple continued fever, and pyrexia of uncertain origin.

In 1905 the number of deaths of persons belonging to the Administrative County from the undermentioned zymotic diseases was as follows:—2 small-pox, 142 measles, 58 scarlet fever, 106 diphtheria, and membranous croup, 101 whooping cough, 60 enteric fever, 2 other continued fever, 30 puerperal fever, 222 diarrhœa, 173 enteritis, 21 erysipelas, and 96 epidemic influenza. Thus, the number of deaths from the principal zymotic diseases in 1905 was 693, which is equal to a death-rate of 1.10 per 1000 living. The principal zymotic diseases death-rate during 1905 was 1.6 in the Municipal Boroughs, 1.0 in the other Urban Districts, and 0.7 in the Rural Districts.

The death-rate for each of the seven principal zymotic diseases has been calculated for the Administrative County, for the whole of England and Wales, and for the 76 large towns in the Kingdom.

The results are as follows:—

1905.	Deaths per 1000 living.		
	For Cheshire.	For the whole of England and Wales.	For the 76 great towns in England and Wales.
Small-pox	0·00	0·00	0·00
Measles	0·23	0·32	0·39
Scarlet Fever	0·09	0·11	0·13
Diphtheria and Membranous Croup ...	0·17	0·16	0·16
Whooping-cough ...	0·16	0·25	0·29
Fever	0·10	0·09	0·08
Diarrhœa	0·35	0·59	0·83
	1·10	1·52	1·88

This shows that the mortality from measles, scarlet fever, whooping-cough, and diarrhœa, was lower in Cheshire than in the whole country, and in the great towns. The mortality from diphtheria and fever was just a little higher in Cheshire than in the whole country and in the great towns. As regards small-pox, there is very little mortality to record. In the whole of England and Wales there were only 113 deaths from small-pox, and in Cheshire there were only 2 deaths.

The mortality from the seven principal zymotic diseases, taken together in 1905, was equal to a death-rate of 1.10 in Cheshire, being 0.42 lower than the corresponding death-rate in the whole country, and 0.78 lower than the corresponding death-rate in the great towns.

The practice in respect of four of the zymotic diseases (small-pox, measles, scarlet fever, and diphtheria), as expressly stated in many of the Reports, appears to be to obtain the isolation of patients as far as practicable, and the disinfection of infected rooms, clothing, bedding, etc., to prevent children belonging to infected houses from attending school, and, if possible, from playing with other children, to endeavour to discover the cause of the disease, to have the premises examined and defects remedied, and, in case of small-pox, to try and induce the inmates of infected houses or any "contacts" to be vaccinated or re-vaccinated. The source of the milk supply and water supply are noted, and often companions of the patient are examined to see if they are suffering from infectious disease. In case of an outbreak of measles or scarlet fever, it is not unusual to advise the closing of the local schools, and occasionally an outbreak of diphtheria is the cause of this advice being given.

In the case of whooping-cough less appears to be attempted, but infected children are ordinarily kept from school, and, if possible, from playing with other children; while, exceptionally, the closing of local schools is advised owing to an outbreak of whooping-cough. On typhoid fever being reported the practice is similar to that adopted in dealing with scarlet fever, or diphtheria, but the incidence of this disease is not so largely on school children.

At Dukinfield all cases of infectious disease are notified to the Librarian at the Free Library, so that no book may be lent out to those living in an infected house; and if a library book happens to be already in the house, it is disinfected or destroyed. In the town of Northwich, also, all cases of infectious disease are notified to the Librarian at the Free Library, and owing to this notification several books have been withdrawn from circulation which otherwise might have spread infection.

In Wallasey all cases of infectious disease are notified to the Free Public Library, and during 1900 a special chamber was provided in which infected books have been since disinfected by formic aldehyde.

Small-pox.—Not many outbreaks of this disease occurred in 1905, and only a small number of cases were notified. In the Borough of Congleton 1 case was notified, in the Borough of Dukinfield 2 cases were notified, in the Borough of Macclesfield 6 cases were notified, and in the Borough of Stalybridge 11 cases were notified, in Hazel Grove and Bramhall 11 cases were notified, and in Hoylake and West Kirby there was 1 case. In the Rural Districts 3 cases were notified, viz. :—1 in Runcorn Rural District and 2 in Wirral Rural District. Only 2 cases proved fatal, one being in the Borough of Macclesfield, and the other in the Urban District of Hazel Grove and Bramhall.

The number of cases of small-pox and deaths therefrom, in Cheshire during the thirteen years immediately preceding 1905, was as follows :—

Year.	Cases notified.	Deaths.
1892	82	8
1893	312	32
1894	38	6
1895	18	2
1896	3	0
1897	0	0
1898	0	0
1899	0	0
1900	25	5
1901	3	0
1902	78	2
1903	202	12
1904	213	18
Annual average	74.9	6.5

Thus, the notified cases in 1905 were not quite the average number, and the deaths in 1905 were not one-third of the average number. In 1905, only 5.7 per cent. of the notified cases were fatal. This compares very favourably with previous records. In 1904, 8.45 per cent. of the notified cases were fatal, and in 1892-1903, there were 8.83 per cent. of the notified cases fatal. It is satisfactory to note that in 1905 34 out of the 35 cases notified were isolated in hospital.

A fairly full account of each outbreak will be found in the appended summaries of Reports of Medical Officers of Health.

However, a few particulars may be introduced here, more especially with the view of showing the causes of origin of some of the outbreaks, which cannot fail to prove interesting.

The only case in the Borough of Congleton occurred in January. A woman (40 years old) in the outskirts of the town, contracted the disease. She had been vaccinated in infancy, and had only a mild attack. She was promptly sent to Hospital, and house inmates and contacts were dealt with in the usual way, but the source of infection could not be discovered.

The two cases in Dukinfield were notified early in January, 1905, and represent the last cases in the epidemic which was so conspicuous in 1904. The disease was of a mild type and the patients were at once sent to Hospital. The source of infection was not traced.

In the Borough of Macclesfield out of six cases of small-pox notified, five occurred during the first quarter and represent the last of an epidemic which was declining at the end of 1904, three out of these cases were infected from a young woman who was certified to be suffering from chicken-pox. Another of the cases was probably infected from a relation who had the disease in a mild form and was not seen by a Doctor. The sixth case occurred much later in the year, and the origin could not be traced. The second was the one which proved fatal. The patient was a woman 72 years of age, said to have been vaccinated in infancy, but no vaccination marks were visible. The eruption in her case was confluent, and the symptoms were severe. There seems no doubt that this old woman was infected by the girl said to have chicken-pox who lodged with her. The ages of the other five patients were respectively, 19 years, 34 years, 26 years, 39 years and 39 years. The eruption in all these cases was discrete. All the patients had been vaccinated in infancy, and each showed vaccination marks covering a surface of about half a square inch. The patients were all removed to hospital. The old woman who died, if she had ever been vaccinated, had long out-grown the protection conferred by vaccination in infancy. It is noteworthy that the girl who infected this old woman had small-pox so mildly that a Medical man diagnosed the disease as chicken-pox.

Of the 11 cases in the Borough of Stalybridge, 4 occurred in January and the other 7 were notified during the last two weeks of December. The 4 cases in January may be regarded as in some way associated with the small-pox outbreak in 1904. The cases in December (with one exception) form a separate outbreak. On December 22nd it was noticed that Mrs. N. was suffering from a mild attack, and she was promptly sent to Hospital. On visiting her home (to re-vaccinate the inmates) on

the evening of the same day, the Medical Officer of Health found her son (8 years old) in an advanced stage of the disease, and her brother-in-law just beginning to be attacked. Both these patients were sent to Hospital, and all that was possible, to prevent the spread of infection, was done. On December 26th, a man and wife were discovered to be suffering from a mild attack of small-pox. The only person living with them was a son (8 years old), and as soon as he was seen it was obvious that he was in an advanced stage of the disease. All 3 patients were sent to Hospital, and steps taken to prevent further infection. The 2 boys (the first attacked in both houses) were unvaccinated, and attended the same school. However, no previous case could be traced, and the source of infection is unknown. On December 28th, a girl (5 years old) was found to have a mild attack and sent to Hospital. Suitable steps were taken to prevent the spread of infection. Enquiries revealed the fact that this girl came, with her parents and little brothers, from Ellesmere Port on December 23rd, and must have contracted the disease before arriving at Stalybridge. The child was sent to Hospital and measures were taken to prevent further infection. No case of small-pox was notified at Ellesmere Port in 1905.

In the Urban District of Hazel Grove and Bramhall there were 8 cases notified in January, and 2 in February, while one case was not notified till May. The Medical Officer of Health states that all the cases were clearly traced to have been introduced into the District from neighbouring towns, but he does not furnish particulars as regards this. Two of those attacked had never been vaccinated, and none had been re-vaccinated.

At Hoylake and West Kirby the only sufferer from small-pox had recently arrived from Spain, and must have been infected on entering the District. He was at once sent to Hospital, and all proper precautions were taken.

In Runcorn Rural District the only case of small-pox notified was that of a man (24 years old) residing at Stockton Heath. The case was recognised on November 21st, and promptly sent to Hospital. Practical precautions to prevent the spread of disease were taken. No possible source of infection could be ascertained.

In Wirral Rural District the two cases occurred nearly at the same time, locality, a comparatively lonely and out-of-the-way place. Their origin is quite inexplicable. Both patients had been vaccinated in infancy, and the eruption was accordingly much modified. One case appeared to be almost free from infection when notified, and the other was at once sent to Hospital. The precautions taken to prevent the spread of disease were successful.

On a general view of such particulars as are supplied, it would appear that the Medical Officers of Health for Boroughs and Districts in the County have not been very successful in tracing the origin of the various outbreaks in 1905.

It may be well, before passing on to another subject, to state briefly what should be learned from the outbreaks of small-pox in Cheshire during 1902—1905.

Local Sanitary Authorities :

1. Should do all they can to promote efficient vaccination and re-vaccination.
2. Should be provided with sufficient Isolation Hospital accommodation for small-pox.
3. Should take steps to make chicken pox notifiable.
4. Should arrange for the systematic inspection of all places frequented by tramps.
5. Should take such steps as are available for getting rid of insanitary property in which all infectious disease tends to spread.

Vaccination Returns, as made by the local Vaccination Officers, are given by the Medical Officers of Health for several districts. According to the return from the Borough of Crewe 83 per cent. of the children born in 1905 (excluding the one who died unvaccinated) were successfully vaccinated at the end of the year. This is a remarkably good record, as parents are allowed a period of six months in which to have their children vaccinated. The return from Dukinfield, which for many years has been far from satisfactory, showed much improvement in 1899-1902. In the latter year 70.4 per cent. of the infants who survived were successfully vaccinated at the end of the year. During 1903 the record was less satisfactory, as only 62.7 per cent. of surviving infants were vaccinated at the end of the year; in 1904 the record was a little worse, as only 60.6 per cent. of the surviving infants were vaccinated at the end of the year, but in 1905 there was an improvement, as 68.25 per cent. of the surviving infants were vaccinated at the end of the year. The return for Wallasey is made up differently. It relates to the children born in the years ending June 30th, 1903, 1904 and 1905. In the first of these years it is reported that (by the end of the year) only 3 per cent. of the surviving infants had escaped vaccination, in the next (by the end of the year) only 1.9 per cent. of the surviving infants had escaped vaccination, while in the last (by the end of the year) only 2.5 per cent. of the surviving infants escaped vaccination. Reports from other smaller districts are as satisfactory. Perhaps

the most convincing returns are those from the Medical Officer of Health for Bucklow Rural and Knutsford, Middlewich and Winsford Urban Districts. As regards his Rural District and the Urban Districts of Altrincham, Bowdon, Hale, Sale, Ashton-upon-Mersey, Lymm, Knutsford and Wilmslow, in the same Union, it is stated that 94.4 per cent. of the surviving children were successfully vaccinated ; the corresponding per centage for the nine years preceding 1904 was 93.4. During 1904, in the Middlewich Sub-District of Northwich Union (of which the town of Middlewich forms about two-thirds), nearly 95 per cent. of the surviving children were successfully vaccinated, and during the eight years immediately preceding the per centage of children vaccinated was uniformly high.

In the Over sub-district of Northwich Union (of which the town of Winsford forms more than three-fourths), 97 per cent. of the surviving infants were vaccinated in 1904, and in the eight years immediately preceding nearly 98 per cent. of the surviving infants were vaccinated. These are remarkable records, as it is not unreasonable to assume that the surviving children whose vaccination was medically postponed on certificate, and those removed and traced have been ultimately vaccinated in the same proportion.

The changes effected by the Vaccination Act, 1898, have been helpful in promoting vaccination, and objections to it are disappearing. The improvements which several of the provisions of the Act introduce into the machinery of vaccination administration have apparently appealed to the good sense of parents, so that the outcome has been a very marked increase in efficient vaccination. The small number of conscientious objectors to vaccination who obtained certificates exempting their children from the operation is referred to in several Reports. In Crewe, certificates of exemption were obtained for 3.33 per cent. of the infants born, in Dukinfield certificates of exemption were obtained for 3.24 per cent. of the infants, and in Wallasey certificates of exemption were obtained for 0.34 per cent. of the infants.

The Vaccination Act, 1898.—The main provisions of this Act are as follows :—

The period within which the parent or person having the custody of a child shall cause it to be vaccinated shall be six months from the birth of the child.

The Public Vaccinator of the District shall, if the parent or person having custody of the child so requires, visit the home of the child for the purpose of vaccinating it.

If a child is not vaccinated within four months after its birth, the Public Vaccinator of the District, after at least twenty-four hours' notice to the parent, shall visit the home of the child, and shall offer to vaccinate the child with glycerinated calf-lymph, or such other lymph as may be issued by the Local Government Board.

The Public Vaccinator shall not vaccinate a child if, in his opinion, the condition of the house in which it resides is such, or there is or has been such a recent prevalence of infectious disease in the district, that it cannot be safely vaccinated; and in that case shall give a certificate of postponement of vaccination, and forthwith give notice of such certificate to the Medical Officer of Health for the district.

Notwithstanding any regulation of any lying-in hospital, etc., the parent of any child born in any such institution shall not be compelled to cause or permit the child to be vaccinated at any time earlier than the expiration of six months from its birth.

No parent or other person shall be liable to any penalty under Section 29 or Section 31 of the Vaccination Act of 1867, if within four months of the birth of the child he satisfies two Justices or a Stipendiary or a Metropolitan Police Magistrate, in Petty Sessions, that he conscientiously believes that vaccination would be prejudicial to the health of the child; and within seven days thereafter delivers to the Vaccination Officer for the district a certificate by such Justices or Magistrate of such conscientious objection.

This section shall come into operation at the passing of this Act; but in its application to a child born before the passing of the Act, there shall be substituted for the period of four months from the birth of the child four months from the passing of the Act.

An Order under Section 31 of the Vaccination Act of 1867 directing that child be vaccinated, shall not be made on any person who has previously been convicted of non-compliance with a similar Order relating to the same child.

No proceedings under Section 31 of the Vaccination Act, 1867, shall be taken against any parent or person who has been convicted under Section 29 of the said Act, on account of the same child, until it has reached the age of four years.

Persons committed to prison on account of non-compliance with any order or non-payment of fines or costs under the Vaccination Act shall be treated in the same way as first-class misdemeanants.

The Local Government Board may make rules and regulations with respect to the duties and remuneration of Public Vaccinators, whether under contracts made before or after the passing of this Act.

The Local Government Board may, by Order, if in their opinion it is expedient by reason of serious risk of outbreak of small-pox or other exceptional circumstances, require the Guardians of any Poor Law Union to provide vaccination stations for the vaccination of children with glycerinated calf-lymph or other lymph as may be issued by the Local Government Board, and modify as respects the area to which the Order applies, and during the period for which it is in force, the provisions of this Act requiring the Public Vaccinator to visit the house of the child otherwise than on request of the parent.

The Clerk of any Sanitary Authority which shall maintain a hospital for the treatment of small-pox patients shall keep a list of the names, addresses, ages and condition as to vaccination, of all small-pox patients treated in the hospital, such entries to be made on admission, and shall at all reasonable times allow searches to be made therein and upon demand to give a copy of every entry in the same on payment of a fee of sixpence for each search and threepence for each copy.

Certain portions of the Vaccination Acts of 1867 and 1871 are repealed during the continuance of this Act.

The Act does not extend to Scotland or Ireland. The Act, except as therein specially provided, came into operation on January 1st, 1899, and remains in force for five years only, unless, in the meantime, that period be extended.*

Vaccination Order.—On October 18th, 1898, the Local Government Board issued a General Order rescinding all the previous Orders and Regulations relating to Vaccination, and prescribing amended Regulations under Section 6 of the new Act. The substitution of a system of domiciliary vaccination for stational arrangements considerably altered the duties of Public Vaccinators and added to their labours, so that a revision of their remuneration was rendered necessary. In the new regulations sums are mentioned which are to be the "minimum" fees payable by the Guardians to Public Vaccinators in respect of successful primary vaccination and re-vaccination, and to Vaccination Officers. The new regulations also prescribe that the visit of the Public Vaccinator to the

* This period has been extended.

home of a child shall be between 9 a.m and 4 p.m., except by mutual arrangement; that at least 24 hours' notice shall be given by the Public Vaccinator of his intention to visit the home of a child, and that the visit shall (in the absence of any sufficient reason for delay) be made within two weeks after receipt of the request of the parent or notice from the Vaccination Officer.

Chicken-pox prevailed to a considerable extent in the Borough of Hyde, where 55 cases were notified, and in Runcorn Rural District, where 63 cases were notified. In many other Districts there were a few cases, but as the disease is not required to be notified, the number of children attacked is uncertain. Little attention is paid to this disease, and it spreads through cases not being properly isolated. The Councils or Boroughs, and Districts would do well to add chicken-pox to the diseases required to be notified, as the Town Council of Hyde did, in February, 1903. There would be no difficulty in obtaining the approval of the Local Government Board. If chicken-pox were notified some effective steps could be taken to prevent it spreading, and in this way doubtless cases of modified small-pox might occasionally come to the knowledge of the Authority. Chicken-pox is characterised by an eruption which may closely resemble that of discrete small-pox, and as the two diseases may be confounded it is important that both should be notified. Moreover, chicken-pox is highly contagious, its infectivity being nearly equal to that of small-pox. As the age of maximum incidence is from three to four years, the disease may readily be communicated from pupil to pupil in Infant Schools.

Measles.—Cases of measles are not ordinarily reported to the Medical Officer of Health, and he seldom has any intimation of the presence of the disease till it proves fatal. The number of deaths from measles in 1905 in the Municipal Boroughs was 75, in the other Urban Districts 49, and in the Rural Districts 18, making a total of 142. In 1904, the number of deaths from measles was 295, in 1903 the number was 60, in 1902 the number was 197, in 1901 the number was 89, in 1900 the number was 161, in 1899 the number was 207, in 1898 the number was 182, in 1897 the number was 363, in 1896 the number was 81, in 1895 the number was 247, in 1894 the number was 143, in 1893 the number was 149, and in 1892 the number was 162. The mean annual number of deaths from measles in the thirteen years, 1892-1904, was therefore 180. Thus the mortality from measles in 1905 was less than half that in 1904, and well below the average in recent years. The measles death-rate in the whole county in 1905 was 0.23 per 1,000 living, as compared with 0.32 in the whole country.

A large proportion of the fatal cases of measles was complicated with bronchitis or pneumonia. As shewing how specially fatal this disease is among very young children, it may be noted that nearly all those who died from measles were under 5 years old. The popular idea about measles appears to be that it is a malady, "all children must have, and the sooner it's over the better," and thus proper precautions for the patient's safety and to prevent the spread of infection are not taken. Of course, it is not true that all children must have measles. "If a child can be shielded from the infection of measles during the first five years of its life, its risk of subsequently acquiring the disease, with all grave possibilities in the way of pulmonary complications is enormously reduced."

Great responsibility rests on the Medical Officer of Health in advising whether schools shall be closed owing to the prevalence of infectious disease. If this appears to be the best practical means of arresting an outbreak, it should of course be tried.

Measles are required to be notified in four districts—Alderley Edge, Ashton-upon-Mersey, Lymm, and Wilmslow.

Children are most liable to attack in the third, fourth, or fifth year of life, but the disease is most fatal in the second year of life; and more fatal in the first and third years than afterwards. Measles is therefore pre-eminently a disease of very young children. In most of the districts where fatal cases occurred (as in previous years) there was evidence that the mortality was associated with "catching cold," showing that this should be specially guarded against. Though it is certainly true that about 90 per cent. of the deaths from measles in Great Britain occur among those under five years of age, and about 98 per cent. among those under ten, no age (even advanced age) affords protection. A far larger number of cases occurring among children than among adults, appears due to the fact that few escape infection during childhood. The maximum mortality for measles is attained in England and Wales in December; the minimum is attained in September; and next to December the mortality averages highest in June. This seems to indicate that extremes of temperature (which are not ordinarily favourable to the health of young children) are specially injurious to those infected with measles or just recovered therefrom.

A great deal has been written and spoken in favour of making measles notifiable; but it is very doubtful if much would be accomplished by this. Measles is not spread by milk, or drinking water, or caused by sewer gas, and no form

of inoculation will protect a child; therefore, there is no particular reason why it should be notified. Owing to the infectiousness of measles for three or four days before the appearance of the eruption, and consequently before the malady is recognised, brothers and sisters, and school-fellows susceptible have probably been infected before the patient can be picked out and isolated. Even if abundant free hospital accommodation were provided (and supplying accommodation for measles is scarcely contemplated in any district), for all who could not be properly isolated at home, so large a proportion of sufferers from measles are children of tender years, that parents would not generally consent to their removal.

To reduce enormously the mortality from measles, what is needed is not compulsory notification and hospital accommodation, but IMPROVED SANITARY ENVIRONMENTS FOR THE HOMES IN WHICH LITTLE CHILDREN ARE BROUGHT UP, AND THE BESTOWAL OF A LITTLE MORE CARE ON EACH CHILD ATTACKED. Ordinarily measles is a comparatively harmless malady in families comfortably off, but among the poor it is often very fatal. The main difference is that well-to-do people's children have been reared in healthy homes, and are put to bed as soon as the disease is recognised, while poor people's children are reared in crowded, ill-ventilated homes, and are left to run about after the disease is recognised.

Finally, it is well to note that the mortality due to measles is not represented solely by those who are certified as dying from it or its immediate sequelæ, for the deterioration of health it produces renders children peculiarly liable to fatal attacks of tuberculosis.

Scarlet Fever, sometimes called scarlatina, is required to be notified throughout the country; thus more is known of the incidence of scarlet fever than of measles.

In all, 2,133 cases were notified in the County during 1905, and out of these 935 (43.83 per cent.) were removed to Hospital for isolation and treatment.

In the Municipal Boroughs 631 cases were notified, and 372 removed to Hospital, that is 58.98 per cent.

In the other Urban Districts, 931 cases were notified, and 451 were removed to Hospital, that is 48.44 per cent.

In the Rural Districts 571 cases were notified, and 112 were removed to Hospital, that is 19.61 per cent.

In 1904 the proportion of notified cases of scarlet fever removed to Hospital was 44.33 per cent., in 1903 the proportion

of notified cases of scarlet fever removed to Hospital was 54.86 per cent., in 1902 the proportion of notified cases of scarlet fever removed to hospital was 36.57 per cent., in 1901 the proportion of notified cases of scarlet fever removed to hospital was 40.93 per cent., and in the nine years (1892-1900), the proportion of notified cases of scarlet fever removed to hospital was 20.4 per cent. Thus the record for 1905, though not as satisfactory as that of 1903 and 1904, compares favourably with that of previous years. However, the proportion of cases removed to hospital does not appear to dopend so much upon the need for removal as on the facilities offered. At Hyde, where there is an excellent hospital, 94.7 per cent. of the notified cases of scarlet fever were removed to hospital; and at Crewe, where there is also an excellent hospital, 81.6 per cent. of the notified cases of scarlet fever were removed to hospital. At Altrincham, where Lloyd's Fever Hospital is available, 76.5 per cent. of the notified cases of scarlet fever were removed to hospital. At Wallasey, where there is a fine hospital, which has been recently enlarged, 65.2 per cent. of the notified cases of scarlet fever were removed to hospital. At the Borough of Macclesfield, where a temporary hospital is provided, 70.87 per cent. of the notified cases of scarlet fever were removed to hospital. In the Wirral Joint Hospital District, where good accommodation is available for seven districts, 73.7 per cent. of the notified cases of scarlet fever were removed to hospital. However, at Dukinfield, where there is no hospital, although there were 47 cases not one was removed, and at Stalybridge where there were 82 cases, not one was removed. Similarly at Congleton, where there is no hospital, out of 65 cases not one was removed. In many Reports the want of hospital accommodation for isolating initial cases is referred to.

The influence of schools in spreading scarlet fever is noted in many Reports, but school closing has not been resorted to as it used to be some years since. Again and again is reference made to the mildness of the disease, which in some instances led to cases not being recognised till they had infected others.

There are interesting notes in some Reports showing various ways in which it appeared that scarlet fever was spread, but there is more about school influence than anything else. At Congleton the number of cases was large in 1905. The spread of infection appears to have been largely due to the disease being of the mildest type, often so mild that the children attacked "were never really ill." At Crewe the disease was spread entirely by personal contact, either at home or at school. General school-closure at holiday-time was followed by the practical disappearance of scarlet fever for a time. In Dukinfield, according to the expressed belief of the Medical

Officer of Health, the scarlet fever germ lives and thrives, and is readily conveyed by infection.

In 1904 it may be remembered the type of scarlet fever was so mild in the Boroughs of Hyde and Macclesfield that not a single death resulted, although in the two towns taken together there were 147 cases. In 1905 there were 10 deaths out of 189 cases at Hyde, and 7 deaths out of 103 cases at Macclesfield. As the Medical Officer of Health for Macclesfield points out, the type of scarlet fever varies much from year to year, and the disease is capable of assuming a more malignant aspect in some years, causing a high mortality and leaving its victims permanently injured.

At Hoylake and West Kirby infection seems to have been imported from Liverpool and Birkenhead, which, considering the free inter communication between the District and these towns, is not surprising.

At Northwich Urban District the main cause of the spread of this disease appears to have been its exceptionally mild character, which is evidenced by the fact that although 78 cases were notified, not a single case proved fatal.

At Wallasey, where an exceptionally large number of cases were notified (348) only 6 deaths were recorded. In the opinion of the Medical Officer of Health the spread of infection was largely due to the mild type of the disease, so mild that many of those infected were not suspected of having the disease, till others had been infected by them. A few of the cases, however, were of an extremely virulent type, and some of the patients suffered from prolonged discharges from the nose and ears, necessitating a long period of detention in Hospital.

At Bucklow Rural District 58 cases were notified, a number a little below the annual average, but 4 proved fatal, though as a rule the cases were well scattered over the District. There was at Northenden an outbreak of 7 cases in three adjoining cottages, and 4 cases had occurred in the same township earlier in the year. There were also 9 cases in Timperley, and 18 in Mere. The cases in Mere which were reported at various times from March to December were all connected together, as one child was notified in March and July, and in another house 2 children where notified twice, that is in March and August. Either, therefore, these children had each two attacks of scarlet fever within a few months (which is exceedingly improbable) or measles or German measles was mistaken for scarlet fever, in fact, one case sent to the Sanitorium in April as scarlet fever, was there diagnosed and treated as measles. The Medical Officer of Health for Knutsford, Middlewich and Winsford Urban, and Bucklow Rural Districts,

draws attention to the serious results which occasionally arise from unrecognised cases of scarlet fever. The first member of the family ill is thought to be suffering from some harmless complaint, and consequently no doctor is called in. It is only when the second case begins that suspicion is aroused that the disease may be infectious. The danger to the public of these cases is obvious. Children who are members of the family continue to go to school and to play with other children, the washing is still sent to the public laundry, and while the illness is going on no attempt is made to isolate a child, who is thought perhaps to be merely suffering from an attack of indigestion. The rash is so very evanescent in some of these cases that unless specially searched for it is extremely apt to be overlooked.

If parents would only understand that there is a real advantage in protecting young children from scarlet fever, they would be more in earnest in carrying out the instructions given. "In shielding a child against infection during the first year of life," says a well-known writer, "there is a double gain; every year of escape from scarlet fever renders him less and less susceptible, until finally he becomes almost insusceptible; and even if he should ultimately take the disease, every year that the attack is deferred reduces the danger to life which it brings."

The number of deaths from scarlet fever in 1905 was 27 in the Municipal Boroughs, 18 in the other Urban Districts, and 13 in the Rural Districts, making a total for the County of 58. As already stated, there were 2133 cases notified, thus, the deaths recorded in 1905 were 2.72 per cent. of the known cases of the disease. In 1904 the deaths were equal to 2.58 of the known cases of the disease; in 1903 the deaths were equal to 3.97 per cent. of the known cases; in 1902 the deaths were equal to 3.09 per cent. of the known cases. In 1901 the deaths were equal to 2.78 per cent. of the known cases; in 1900 the deaths were equal to 4.0 per cent. of the known cases; in 1899 the deaths were equal to 2.9 per cent., in 1898 the deaths were 3.98 per cent., in 1897 the deaths were 5.2 per cent., in 1896 the deaths were 4.6 per cent., in 1895 the deaths were 4.4 per cent., in 1894 the deaths were 4.5 per cent., and in 1893 the deaths were 4.8 per cent. of the known cases. The case-mortality in 1903 is therefore just below the average of recent years in Cheshire, and the case-mortality in 1904 and 1905 is far lower than in any previous year on record in the County. The London case-mortality averages about 5 per cent., and any percentage not exceeding 4 per cent. may be considered fairly low.

Of the 58 persons who died from scarlet-fever in Cheshire in 1905, three were infants under a year old, 39 were children a year old and under five years, 13 were children five years old and

under 15 years, and three were adults upwards of 25 years of age, and under 65 years.

Return Cases.—This term is used to indicate cases re-appearing in households shortly after the return of a patient from hospital. Such cases are referred to in a very few Reports. In the Borough of Crewe it is fully realized there is no getting rid of the possibility of return cases, and the Medical Officer, when admitting to hospital any case of scarlet fever, sends a notice to the parents intimating that the Corporation will not be liable for future infection which may occur at home after the child's discharge. The Corporation of Macclesfield protect themselves as far as is practicable in a similar way.

Return cases cannot all be ascribed to inefficient disinfection of the discharged case, for they occur in connection with Isolation Hospitals where particular attention is paid to the cleansing of the skin and hair of each patient, where the mouth and nose are washed out with an antiseptic lotion, and every patient has an antiseptic bath before discharge. Indeed it is not easy to explain how these cases occur. In spite of the exercise of great care, it seems impossible to guarantee freedom from infectiousness on discharge. In a town in which scarlet fever is epidemic, it may not be possible to say if a recurrence in the same house is the result of infection from a recently returned member of a family from hospital or an independent infection from outside. However, when return cases occur in rural districts the evidence may be very strong either that the returned patient was himself infectious, or that infectious particles were retained in his clothes.

The Question of Auxiliary Hospital Provision.—In June, 1902, the Clerk to the Wirral Joint Hospital Board drew the attention of the Public Health Committee of the County Council to the fact that return cases of scarlet fever had occurred from time to time, apparently in consequence of some taint of the disease having been carried back by the patient to his home, although kept for a long time in hospital, and not discharged until the doctor thought him entirely free from infection. The Board were advised that the best way to prevent this would be to provide a Convalescent Hospital—say at Heswall or some place quite away from the Fever Hospital—where patients could be transferred for about a fortnight before being sent home. The Clerk concluded by asking, if the Board were to borrow money to buy a site for and build such a hospital, whether the Council would contribute towards that, in the same way they propose to do to ordinary Isolation Hospitals.

The Public Health Committee, on receipt of this communication from the Clerk to the Wirral Joint Hospital Board,

resolved: "That the Clerk obtain an expression of opinion from the Local Government Board whether the Local Authorities (including Joint Boards) within the meaning of the Public Health Act, 1875, have the legal power to provide auxiliary Infectious Hospitals for the use of persons discharged from ordinary Infectious Hospitals, so as to permit of County Councils contributing under the Isolation Hospitals Acts towards the cost of providing the same if they should consider it expedient or advisable to do so."

The Clerk accordingly wrote to the Local Government Board, and received a reply, under date September 25th, 1902, "that the auxiliary Hospital referred to may properly be held to form part of the scheme of Hospital Accommodation for the provision of which the Joint Hospital Board in question was constituted."*

Diphtheria and Croup are diseases which appear to be notified very irregularly. During 1905 there were 606 cases of diphtheria and 30 cases of membranous croup notified, and the deaths recorded were 106 from diphtheria and membranous croup, and 6 from croup. Of the cases notified as diphtheria 163 were removed to Hospital, and of the cases notified as membranous croup not one was removed to Hospital. As diphtheria and membranous croup are required to be notified, and as death from both are returned under the same column, they must be taken to represent one disease, viz., diphtheria. What the disease is which is returned as croup, and yet not membranous croup, seems uncertain, but it certainly should not be classed under this heading. Possibly the 6 deaths assigned to "croup" may have been spasmodic croup.

Thus there were in the County, during 1904, 636 cases of diphtheria, and of them 106 were fatal, *i.e.*, the case-mortality was 16.66 per cent. In Municipal Boroughs 22.88 per cent. of the known cases were fatal, in the other Urban Districts 14.51 per cent. of the known cases were fatal, and in the Rural Districts 16.49 per cent. of the known cases were fatal. The death-rate per 1,000 living in the Municipal Boroughs was 0.15, in the other Urban Districts 0.16, and in the Rural Districts 0.18. In the whole Administrative County the diphtheria death-rate was 0.16 per 1,000 living, that is 0.01 above the corresponding death-rate in England and Wales.

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* The Wirral Joint Hospital Board having acquired a plot of land with a house thereon at Pensby, adapted the house for use as a Convalescent Home. Suitable cases from the Board's Isolation Hospital have since been sent to this Home. Patients after being examined by the Board's Medical Officer, and certified free from infection and ready for discharge, are frequently sent to this Home (for fourteen days or longer) before returning to their friends.

Of the 636 cases notified, 163 were removed to hospital for isolation and treatment, that is 25.63 per cent.

In the Borough of Crewe 150 cases were notified in 1903, and of these 18 had a fatal termination. In 1902 there were 136 cases notified, of which 28 had a fatal termination. The large number of cases and deaths in two consecutive years may be compared with the Crewe record in 1904—53 cases notified and 3 deaths; and the Crewe record in 1905—47 cases notified and 4 deaths. The average annual number of deaths in Crewe from this cause from 1874 to 1901 was 6. In Dukinfield there were 7 cases and no deaths in 1904, and 10 cases and 1 death in 1905. At Hyde the record has been very bad of late. In 1904 there were 34 notified cases, of which 13 were fatal, and in 1905 there were 24 cases, of which 10 were fatal. In Macclesfield Borough the case-mortality was high, 6 out of 14 cases having proved fatal in 1905. In Stalybridge the case-mortality was even higher, 6 out of 10 cases having proved fatal in 1905.

At Middlewich, diphtheria was prevalent and fatal in 1905, there having been 39 cases and 11 deaths. The epidemic recorded in 1904 continued in 1905. The Medical Officer of Health reports that he was compelled to take very unusual steps in putting strong and repeated pressure upon local practitioners to induce them to use antitoxin. Runcorn Urban District had a better record in 1905 (54 cases and 4 fatal) than it had in 1904 (72 cases and 8 fatal). At Wallasey there were 65 cases of diphtheria, of which 10 were fatal in 1905, which is similar to the record for 1904, when there were 65 cases, of which 9 were fatal. At Mottram, out of 5 cases notified 4 were fatal. They occurred in different parts of the District and at different periods of the year, and they appear to have had separate sources of origin. One of the cases appears to have been infected during a visit to Chester.

In several instances the influence of insanitary environment is referred to as a factor in localities where outbreaks of diphtheria have arisen. Generally the disease seems to have been spread from person to person, especially in schools or workshops whose ventilation was imperfect. Weakly children, and those having delicate throats, or who have recently recovered from another infectious disease seem specially liable to be infected. When a case occurs isolation is not easy in the houses of working people, and hospital accommodation for cases of diphtheria is not generally available.

Of the 58 persons who died from diphtheria or membranous croup in 1905, 3 were infants under a year old, 39 were a year old and under five years, 13 were between five and fifteen years old, and 3 were between 25 years old and 65 years.

The Diagnosis of Diphtheria.—The need of assistance in diagnosing cases which may or may not be diphtheria, is generally recognised by Medical Officers of Health ; and expression is given to this need in several Reports. The Medical Officer of Health for the Borough of Crewe has made arrangements with Dr. Delépine, Professor of Pathology, of the Victoria University of Manchester, for having material from doubtful cases of diphtheria and typhoid fever examined bacteriologically. These arrangements were made at the close of 1896, and a copy of the circular letter on this subject sent during December, 1896, to every Medical Practitioner in Crewe, was printed in the summary of the Crewe Health Report for 1896. This letter explained what it was proposed to do, and the manner of doing it. During 1897 similar arrangements were made with Professor Delépine by the Medical Officers of Health for Alderley Edge and Bollington, and during 1898 similar arrangements were made with Professor Delépine by Medical Officers of Health for the Borough of Congleton, the Urban Districts of Altrincham, Knutsford, Middlewich, Northwich, and Winsford, and the Rural Districts of Bucklow and Nantwich. During 1899 similar arrangements were completed for the Boroughs of Dukinfield and Hyde, and the Urban Districts of Ashton-upon-Mersey, Cheadle and Gatley, Hollingworth and Marple. During 1900 similar arrangements were made for the Urban Districts of Bredbury and Romiley, Hale, and Wilmslow, and the Rural District of Northwich. Similar arrangements were made in 1901 for Bowdon Urban District, and early in 1902 for Lymm Urban District, and in 1903 Runcorn Rural District had the advantage of similar arrangements. Communications have been made to all other Districts in the County, pointing out the advantage of affording facilities for the early diagnosis of diphtheria and typhoid fever. The Corporation of Macclesfield have made arrangements for having pathological material bacteriologically examined at the Jenner Institute. Nantwich Urban District Council have made arrangements with Professor Boyce, of Liverpool University, for having material from doubtful cases of diphtheria and enteric fever examined bacteriologically.

The Antitoxin Treatment of Diphtheria.—In certain diseases the blood serum of artificially protected animals, if injected into others still susceptible, has a protective power. Behring found that such a serum could be used to protect from diphtheria and to cure the disease, and after many experiments produced a serum strong enough to be of use for man. Since this discovery Behring, Aronsohn, and others, have, after various trials, succeeded in showing how to produce a very strong, trustworthy preparation of serum ; and abundant proof has been given of the value of this so-called "Antitoxin" in hospitals and private practice. It has been clearly shown to be of great use in pro-

tecting from diphtheria, and in curing the disease. The question of the free supply of diphtheria antitoxin to those of the ratepayers not in a position to pay for it was discussed in 1900 and in 1901. At Crewe, during 1900, a good example was set to other districts. A supply of diphtheria antitoxin was ordered to be kept at the Isolation Hospital, so that Medical Practitioners could obtain what they wanted at cost price, and have the loan of a special injection syringe. In 1901, the Corporation of Crewe took a further step (as has been already recorded) and provided antitoxin free of cost for the treatment of cases of diphtheria. The majority of Medical Practitioners in the Borough have availed themselves of the advantage offered. During 1901 the Corporation of Hyde ordered antitoxin to be kept at the Hospital and sold at cost price to those requiring it. In Nantwich Rural District, when antitoxin was wanted by the Medical Officer of Health, a lady kindly supplied it.

Memorandum on Diphtheria, its Diagnosis, Prevention, and Cure.—Owing to the exceptional prevalence of diphtheria in several districts, it was deemed advisable to issue an Official Memorandum upon the subject of the disease, its diagnosis, prevention, and cure, in November, 1902. This memorandum was reprinted in the Annual Report for 1902. In it the duty of the Sanitary Authority, with reference to diphtheria, is summarized as follows :—

1. To inquire into the causes of single cases of diphtheria and outbreaks.
2. To insure the destruction of infected milk and, if possible, of infected animals.
3. To disinfect infected premises, bedding, clothing, &c.
4. To prevent, as far as practicable, personal infection, especially during epidemic periods. This will often include making certain restrictions as to school attendance, or recommending school closure.
5. To make Hospital provision for the isolation and treatment of such cases of diphtheria as may arise.
6. To keep a supply of diphtheria antitoxin at some convenient place (e.g., the local Isolation Hospital), to be used by Medical Practitioners for the treatment of cases of diphtheria, and the protection of those exposed to infection; and also to keep at the same place a syringe or syringes to be used for injecting the antitoxin. The antitoxin might be provided free for those who cannot afford to pay for it, and at cost price for others. A syringe to inject the antitoxin might also be lent free.

7. To make arrangements with the Pathological Department of the University at Manchester or Liverpool, or other suitable Institution to enable local Medical Practitioners to have material from doubtful cases examined bacteriologically and reported on.
8. To prevent ground air from gaining admission to houses.
9. To render more wholesome, by any means available, the soil in districts in which diphtheria has become endemic.

Whooping-cough is not notified, and the extent of its prevalence has to be gauged by the death record. The number of deaths, during 1905, in the Municipal Boroughs was 65, in the other Urban Districts 25, and in the Rural Districts 10—in all 101. The number of deaths from whooping-cough in 1904 was 212. The number of deaths from this disease in 1903 was 196; the number in 1902 was 114; the number in 1901 was 145; the number in 1900 was 214; the number in 1899 was 135; the number in 1898 was 111; the number in 1897 was 287; the number in 1896 was 176; the number in 1895 was 110; the number in 1894 was 217; the number in 1893 was 120; and the number in 1892 was 230. Thus the number of deaths from whooping-cough in 1905 was exceptionally small—73 less than the yearly average in 1892—1904.

Whooping-cough seems to have been specially fatal at Crewe, 28 deaths therefrom being recorded in this Borough in 1905, half of those who died being infants under a year old. At the Borough of Macclesfield, also, the mortality from whooping-cough was very high in 1905, 18 deaths having been recorded, 10 of those who died were infants under a year old.

In a few Districts the elementary schools, or the Infant Departments of these schools, were closed on account of this disease being prevalent among the scholars. Infants' Departments having to be closed wherever whooping-cough is epidemic seems to point to the unwisdom of sending children to school between the age of 3 and 5 years.

Parents, and those in charge of very young children, should do their best to avoid any risk of infection, as, if a child can be shielded from the disease during the first five years of life, its risk of subsequently taking the disease is much lessened, and, if it should acquire it, the chances of recovery are much increased. This advice has been often repeated—the difficulty is to induce people to follow it.

As showing how fatal this disease is in early life, it is interesting to note that 55 of the deaths were of infants under a

year old, 40 were of children a year old and under five years, and 6 were of children between five and fifteen years old.

Infectiousness in whooping-cough, as in measles, begins with the earliest symptoms. In the early non-spasmodic stage the child is most likely to be a source of danger to others. When the whoop appears (and the disease is commonly not recognised till then) the power of communicating the disease begins to decline. For this reason, and for others, compulsory notification of whooping-cough is not likely to prove of much assistance in checking the spread of the disease. The disease has been notifiable in Ashton-upon-Mersey since November 6th, 1897.

There are indeed few maladies so difficult to deal with as whooping-cough, from a public health point of view. Its onset is insidious, and the catarrhal stage (during which the symptoms are not characteristic) commonly lasts nearly a week. As a matter of fact, little seems to be done throughout the County to stop the spread of the disease. Still there is no doubt about the infectiousness of whooping-cough, or the need of keeping infected children from others, and in particular from school. The mortality from whooping-cough would probably be much reduced if those in charge of children regarded the disease more seriously, and had the patients properly nursed and kept warm. And this mortality needs reducing, for whooping-cough is the most fatal of all infectious diseases of children under 5 years of age.

Fevers.—In the official form furnished to Medical Officers of Health by the Local Government Board, and used for making mortality returns, "Fever" is divided into three, viz.: "Typhus," "Enteric," and "other continued." Puerperal fever, like scarlet fever, is classed elsewhere in the form. During 1905, there was no death from typhus fever, there were 60 deaths from enteric (or typhoid) fever, and there were 2 deaths from other continued fever.

Enteric and other continued Fever.—Enteric fever (called also typhoid fever) and simple continued fever may be considered together, as it seems probable that a large proportion of cases notified as continued fever are really enteric fever. Of the 356 cases notified in the County during 1905, 135 (37.92 per cent.) were removed to Hospital.

That is to say :—

In the Municipal Boroughs 116 cases were notified and 24 removed—20.69 per cent.

In the other Urban Districts 179 cases were notified and 97 removed—54.19 per cent.

In the Rural Districts 61 cases were notified and 14 removed—22.95 per cent.

In the Borough of Congleton there were only 3 cases of enteric fever, but one proved fatal. As regards 2 of these cases the sanitary state of the premises was very bad. In Crewe there were 10 cases, 4 of which proved fatal, giving a case-mortality of 40 per cent. Three of the notified cases were imported from other districts, the patients having returned to their homes in Crewe owing to their illness. The other cases were sporadic, and at least two of them proved on continued observation to be suffering from some other disease. In the eight years 1897-1904 the annual average number of cases was 19.6 and the annual average number of deaths was 4.2.

In Dukinfield there were 20 cases of enteric fever notified, of which 7 were fatal. The mortality compares unfavorably with that of recent years. So many cases and deaths appear to indicate that in many houses faulty sanitary conditions continue. Hyde suffered much more severely, 54 cases having been notified, of which 12 proved fatal. None of these cases were traced to contaminated water or milk. As in former years the number of cases was relatively less in Hyde District than in Newton, where a larger number of houses have privy-closets. Pails with air-tight covers for the reception and prompt removal of typhoid excreta are supplied to houses which are not on the water-carriage system. In the Borough of Macclesfield 13 cases were notified, but not one appears to have been fatal. This is the most satisfactory record received from Macclesfield for many years. The Medical Officer of Health is of opinion that the decline of this disease is, to some extent, due to a reduction of the privy-middens. At Stalybridge there were 16 cases notified, 4 of which proved fatal, thus the case-mortality was 25 per cent.

The Medical Officer of Health expresses an opinion that less will be seen of this disease as progress is made in rendering the town more sanitary. It seems to be conveyed most frequently by the air or by flies from foul privy-ashpits, which exist throughout the town. Fortunately these privies are gradually being replaced by water-closets, and receptacles for garbage and ashes which can be frequently and regularly emptied.

At Altrincham 10 cases of enteric fever were notified in 1905, of which 4 proved fatal, thus the case-mortality was 40 per cent. Some of the cases were clearly imported, others were sporadic and had no common cause.

In Runcorn Urban District 43 cases of enteric fever were notified, of which 5 were fatal. This record is somewhat similar

to that presented for 1904, when there were 42 cases and 4 deaths. In this Urban District there has always been a considerable prevalence of enteric fever, but neither the cases notified nor the mortality therefrom is anything like as high as it used to be.

Wallasey is one of those Districts that is rarely quite free from enteric fever. In 1905 there were 61 cases notified, of which 8 proved fatal, thus the death-rate was equal to 0.13 per 1000 living. It is obvious that this District is reaping the advantage of the extensive re-construction of sewers which has been carried out in recent years and is still in progress. The efforts made to cope with enteric fever have in a great measure been successful.

During 1905 the largest number of cases notified in any Rural District were recorded in Runcorn Rural District, were 17 cases occurred. Two cases which proved fatal occurred in connection with an outbreak of the disease at Weston, and were popularly attributed to effluvia emitted from the old sewers, during the process of taking them up prior to re-laying the sewers. This explanation of the cause of the local outbreak is however rejected by the District Medical Officer of Health. The number of cases notified and the number of deaths are in excess corresponding average 1895-1904.

The number of deaths from enteric (including other continued) fevers, in 1905 was 28 in the Municipal Boroughs, 23 in the other Urban Districts, and 9 in the Rural Districts, 60 in all, thus 16·8 per cent. of the known cases of this disease were fatal in 1905. In 1904 there were 65 deaths—19·0 per cent. of the known cases. In 1903 there were 40 deaths—14·1 per cent. of the known cases. In 1902 there were 66 deaths—16 6 per cent. of the known cases. In 1901 there were 1,000 deaths—13·7 per cent. of the known cases. In 1900 there were 107 deaths—16·5 per cent. of the known cases. In 1899 there were 101 deaths—14·1 per cent. of the known cases. In 1898 there were 106 deaths—15·18 per cent. of the known cases. In 1897 there were 68 deaths—14·0 per cent. of the known cases. In 1896 there were 86 deaths—16·4 per cent of the known cases. In 1895 there were 76 deaths—17·0 per cent. of the known cases. In 1894 there were 81 deaths—18·0 per cent. of the known cases. In 1893 there were 118 deaths—15·0 per cent. of the known cases.

Of the 62 persons who died from enteric fever or continued fever, 3 were under 5 years of age, 8 were 5 years old and under 15 years, 14 were 15 years old and under 25 years, 36 were 25 years old and under 65, and 1 was upwards of 65 years of age.

The Diagnosis of Typhoid or Enteric Fever.—Owing to the length of time during which typhoid fever is latent, it ordinarily happens that infective excreta are emptied into midden-privies before it is possible to recognise the disease with certainty. Hence, the great value of a test which will enable a Medical Practitioner to recognize this disease at an early stage. Such a test was discovered by Dr. Fernand Widal, of Paris, in 1896. It is based on the action which the blood of patients affected with typhoid fever has on cultures of the typhoid bacillus.*

This test is now available for any district in Cheshire. All that the District Council has to do is to make arrangements with the Pathological Department of the Victoria University of Manchester or the University of Liverpool, and then material can be sent to the College from doubtful cases of typhoid fever, diphtheria, or phthisis, etc., by Medical Practitioners in the said District, and the material will be promptly subjected to bacteriological tests, and reported on. Such arrangements have been made by the Corporations of Crewe, Congleton, Dukinfield, and Hyde, and by twenty other authorities in the County, and it would doubtless be for the advantages of all Corporations and District Councils if they took similar action.

From many Districts evidence has been received of the usefulness of this test.

For the Borough of Macclesfield tests are applied by the Jenner Institute. Medical Practitioners are permitted to have the test applied in doubtful cases, the Authority defraying the cost.

Diarrhœa is the last of the seven principal zymotic diseases, according to the returns of the Registrar-General. What is, and what is not to be regarded as diarrhœa is a question of importance from a statistical point of view, as increasing and

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* The quick method of applying Dr. Widal's test is thus described by Professor Delépine. Take a drop of blood or of the serum to be examined. Dilute with 9 parts of neutral bouillon. Mix on a slide or cover-glass a drop of this one-tenth dilution of the serum with one or more drops of a young (24 hours old) culture of the typhoid bacillus. Cover the mixed drops with a cover-glass, or, if the mixture has been made on a cover-glass, place this cover (film downwards) on a slide. Examine the preparation at once with a microscope. The most convenient powers to use are such as will magnify from 200 to 300 times in diameter; but the reaction can be seen with a very low power, and, when it is well marked, even with the naked eye. If the serum, or blood, be of a typhoid patient in the 2nd, 3rd, 4th or 5th week of the illness, the reaction will in most cases appear almost instantaneously. Within one or two minutes the bacilli, instead of moving rapidly, as when they are in presence of non-typhoid blood, become sluggish and, in many cases, motionless. They run together as if moved by some force of attraction, and form clumps of various sizes. This *agglomeration phenomenon* may sometimes be so

lowering the zymotic death-rate. It is therefore well that the official forms [issued by the Local Government Board to be used for 1900 and since] have a note on this subject. The note is as follows :—

> Under the heading of "Diarrhœa" are to be included deaths certified as from diarrhœa, alone or in combination with some other cause of ill-defined nature ; and also deaths certified as from
>
> Epidemic enteritis;
> Zymotic enteritis ;
> Epidemic diarrhœa ; Summer diarrhœa ;
> Dysentery and dysenteric diarrhœa ;
> Choleraic diarrhœa, cholera, cholera nostras (in the absence of Asiatic cholera).
>
> Under the heading of "Enteritis" are to be included those certified as from Gastro-enteritis, Muco-enteritis and Gastric catarrh, unless from information obtained by enquiry from the certifying practitioner or otherwise the Medical Officer of Health should have reason for including such deaths, especially those of infants, under the specific term "Diarrhœa."
>
> Deaths from diarrhœa secondary to some other well-defined disease should be included under the latter.

Attention is also especially invited to the recent decision of the Royal College of Physicians, advocating the use of authorised names for diarrhœa and diarrhœal diseases.

The Royal College of Physicians of London, in response to an earnest appeal for its authoritative guidance concerning the certificates of death from diarrhœa, has now expressed an opinion which, if loyally adopted by medical men throughout the country,

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complete that after a space of time, varying between five minutes and twenty minutes, hardly any bacilli remain free between the clumps. In a few instances the reaction is not distinct before the end of the first or second hour ; but these cases are exceptional. In the case of healthy or diseased persons not affected with typhoid fever, no such reaction is observed. It is true that when too large a proportion of blood is used, even the serum of healthy persons may give rise to agglomeration of the bacilli. But the phenomenon in such cases is far less clear and well-defined than in cases of typhoid fever, and generally comes on very slowly. In typhoid fever the reaction has been observed by Widal on the 4th and 5th days ; and some American observers have reported a reaction at an earlier date still. It must be remembered, however, that during the first week the reaction is often slow and not quite clear, and that to establish a clear diagnosis re-examination in very often necessary. Widal and Sicard found that blister fluid had the same properties as the blood serum. Milk and tears of typhoid patients have also been found to behave in the same way, though they are less active than the blood serum.

in granting certificates of death, will greatly improve the national records of mortality from this disease. The following is an extract from the proceedings of the College, dated January 25th, 1900:—

"The Royal College of Physicians is convinced after careful enquiry: (a) that various unauthorised and misleading terms such as 'gastro-enteritis,' 'muco-enteritis,' 'gastric-catarrh,' etc., are now commonly employed to designate the disease officially known as 'epidemic diarrhœa,' whereby its specific character is in danger of being ignored, and great confusion ensues; (b) that the present confusion of terms renders it impossible to determine accurately either the prevalence of the disease in special places and at special times, the extent to which it influences the public health, or the effects produced by sanitary measures; (c) that there is a widespread objection, on the part of medical practitioners to the employment of the term 'diarrhœa' in certifying the cause of death, probably because that term is generally held by the public to imply a mild disease, insufficient by itself to cause death.

"The College, therefore, has sought to discover as an alternative for the authorized term (epidemic diarrhœa) some other name, which whilst equally accurate, should convey to the public the idea of a more serious affection. But the College regards it as essential that the idea of specificity, intended to be conveyed by the term 'epidemic,' should be retained.

"As the result of much deliberation, the College has agreed to authorize the use of the term 'epidemic enteritis' (or if preferred by the practitioner, 'zymotic enteritis'), as a synonym for epidemic diarrhœa. The College has further decided to urge upon practitioners the entire disuse, in medical certificates of death, of such terms as 'gastro-enteritis,' 'muco-enteritis,' or 'gastric catarrh,' as synonyms of epidemic diarrhœa."

Diarrhœa is not notified, and the extent of its prevalence year by year is measured by its death record. In 1905 the number of deaths ascribed to diarrhœa was 63 in the Municipal Boroughs, 123 in the other Urban Districts, and 36 in the Rural Districts. Out of the 222 whose deaths were registered as due to diarrhœa in 1905, 169 were infants under a year old, 30 were children one year old and under 5 years, 4 were children 5 years old and under 15 years, 8 were adults 25 years old and under 65 years, while 11 were old people 65 years of age or upwards.

The number of deaths from diarrhœa in 1904 was 381, the number in 1903 was 194, the number in 1902 was 126, the number in 1901 was 445, the number in 1900 was 326, the

number in 1899 was 506, the number in 1898 was 572, the number in 1897 was 460, the number in 1896 was 239, the number in 1895 was 453, the number in 1894 was 168, the number in 1893 was 652, the number in 1892 was 205. The diarrhœa mortality varies much from year to year, and latterly has been high each alternate year; however, the records for 1897-99 afford an instance of three consecutive years in which a high death-rate has been maintained. In 1903 the Cheshire mortality from diarrhœa was very much below the corresponding mortality in 1892-1902, which averaged 377.5 deaths. In 1904 the Cheshire mortality from diarrhœa was a little above this average, but in 1905 this mortality was nearly as low as in 1903. Cheshire compares favourably with the whole country in this respect. In 1905 the diarrhœa death-rate was equal to 0.35 per 1000 living in Cheshire, and equal to 0.59 per 1000 living in the whole of England and Wales.

This disease prevails to some extent every autumn, and is associated with high temperature and putrefactive changes in food. As indicating the connection of this disease with the food of those who suffer, it has often been proved by statistics to be specially a disease of hand-fed infants. As illustrating the truth of Dr. Ballard's conclusions, that as soon as the temperature reaches 56 degrees Fahr. at a depth of 4 ft., the disease may be expected to appear more or less extensively; the experience at Crewe has been often referred to in previous Annual Reports. Weather conditions seem to have had much to do with the low diarrhœa death-rate in 1903 and 1905, and also with the somewhat high death-rate in 1904. In districts where investigations have been made it has been found that there is a preponderance of deaths from diarrhœa among artifically fed infants, and there can be no doubt that bottle-fed infants are more liable to suffer from this disease than infants brought up wholly on the breast. The bottle most in use among the poor is the one having a long rubber tube between the bottle and the teat. It is difficult to keep such a tube clean, and as a rule it contains traces of milk which is sour or decomposing. The milk is not always clean and fresh when bought, and if it be both, the dirty condition of many of the houses soon contaminates it. Condensed milks seem to be very much used, especially among the poorer people. These, no doubt, are excellent and useful preparations, but not for infants. They are deficient in fat and contain an excess of cane sugar, and their use for feeding infants is liable to produce rickets, and should therefore be discouraged. In some cases the method of preparing the milk for use is very defective, exposing the infants fed thereon to gradual starvation.

At Crewe inquiries are made into the circumstances attending each death, as is done at Dukinfield and Hyde.

Enteritis.—After what has just been stated as to the use of this term, it seems probable that it will in the future be used less and less, and much consequent error will cease. During 1905 enteritis was registered as the cause of 173 deaths in Cheshire, 62 being in the Municipal Boroughs, 78 in the other Urban Districts, and 33 in the Rural Districts. Of those who died, 112 were infants under a year old, 22 were a year old and under 5 years, 9 were between 5 years and 15 years, 3 were between 15 and 25 years, and the remaining 27 were upwards of 25 years of age.

Cholera.—In Runcorn Urban District a case of cholera in an adult was duly notified in 1905, and when it had a fatal termination, the death was certified, and registered, as due to "cholera." The Medical Officer of Health for the District does not think that it is necessary to call special attention to this case, as it was not of the Asiatic type. He adds that possibly the person who thus died was prone to an attack of British cholera.

Epidemic Influenza.—The official forms on which, since 1900, mortality returns from Boroughs and Districts have been made, include "epidemic influenza," among the diseases for which a separate return is required. Prior to 1900, returns as to the number of deaths from influenza were made in this County by request, but such voluntary returns are necessarily imperfect. In 1905 the number of deaths reported as due to epidemic influenza was 96, of which 33 were in the Municipal Boroughs, 43 were in the other Urban Districts, and 20 were in the Rural Districts. In 1904 the number of deaths reported from this cause was 73. In 1903 the number of deaths reported from this cause was 90, in 1902 the number of deaths reported was 74, in 1901 the number of deaths reported was 83, in 1900 the number of deaths reported was 286, in 1899 the number of deaths reported was 251, in 1898 the number of deaths reported was 146, in 1897 the number of deaths reported was 104, in 1896 the number of deaths reported was 39, and in 1895 the number of deaths reported was 157. The death-rate per 1,000 living was thus 0.15 in Cheshire in 1905. This does not compare favourably with a death-rate of 0.12 in 1904, 0.14 in 1903, 0.12 in 1902, or 0.13 in 1901. However during these five years this death-rate has not varied much.

One of those who died from influenza in 1905 was an infant under a year old, 5 were 1 year old and under 5 years, 6 were between 5 years and 25 years, 51 were adults 25 years old and under 65 years, and 33 were persons 65 years old and upwards.

There is no doubt about the infectiousness of influenza, and this infectiousness appears to continue from the onset of the disease until the patient is sufficiently convalescent to resume his

ordinary occupation, but there is very little that the Loca Authority can do to limit the spread of the disease when it has once appeared in a district. Compulsory notification, even if practicable, would be of very little use, and certainly hospital provision could not be made for cases. Still, the public should be informed that the infective particles are present largely in what is discharged from the lungs and nasal passages, and that these should not be allowed to dry and scatter infection, but be at once burnt, or received into water, and emptied down a drain leading to a sewer. The public should be informed also that anyone having influenza should keep to himself as much as possible, especially avoiding assemblages of people. Of course, after recovery of the patient, infected rooms and clothing should be disinfected.

Puerperal Fever is a term which, according to the Registrar-General, should no longer be used. However, Medical Practitioners, in writing certificates of the cause of death, continue to employ it. A few years ago puerperal fever was regarded as an acute specific fever occurring in lying-in women only, but it is now commonly held to be a puerperal septic disease caused by infectious germs directly conveyed to the patient by defiled hands, sponges, etc., or otherwise.

During 1905, there were 29 cases notified and 33 deaths in the Municipal Boroughs, 30 cases notified and 43 deaths in the other Urban Districts, and 10 cases notified and 20 deaths in the Rural Districts. Thus, there were in all 69 cases notified and 96 deaths. During 1904, there were 61 cases notified and 31 deaths. The record in 1904 seemed to indicate that many cases of this malady had not been notified; the record in 1905 proves that a very large proportion of cases have not been notified. The truth is that puerperal fever is very irregularly notified, and the cause of this is not far to seek. It is of more frequent occurrence among those who, from poverty or other causes, are without skilled attendance and nursing. Thus, numbers of cases are never seen by a Medical Practitioner, and in many instances the first intimation the Medical Officer of Health has of a case is after the death of a patient. Rarely indeed is it practicable to send a case of puerperal fever to Hospital (5 cases were sent in 1905) but possibly something more might be done in impressing upon the poor the necessity of infinite cleanliness in the treatment and environment of lying-in women. In the Chester Rural District and other districts belonging to the West Cheshire combination, the bedding used by puerperal fever patients is destroyed, and compensation given. It would be wise to do this in all cases notified in a district where no steam disinfector has been provided. Every midwife or nurse who has been in attendance on a puerperal fever patient should be cautioned not to attend another case until she

has had a bath, washed her head, and had her clothes properly disinfected. Even after taking such precautions the midwife or nurse would do well to take a few days' holiday before resuming work.

The Medical Officers of Health for the Boroughs of Crewe, Hyde, and Macclesfield, arrange for the disinfection of women who have lately attended cases of puerperal fever at the Isolation Hospitals.

The Midwives Act, 1902.—At a Meeting of the Public Health Committee, on October 24th, 1902, the Clerk called the attention of the Committee to this Act, and the powers conferred upon County Councils thereunder, and it was

> Resolved—That the Clerk furnish each Member of Committee with a copy of such Act, and that the County Medical Officer of Health report to the next Meeting of the Committee the action he recommends the County Council should take thereon.

Accordingly, at the next Meeting of the Committee, on January 23rd, 1903, the County Medical Officer submitted a Report as instructed. This Report was printed in full in the County Medical Officer's Annual Report for the year 1902.

After this Report was presented, it was referred to a Committee which the Council were recommended to appoint, delegating to them the powers of the Council to take such action as they may think fit for putting the Act into operation on April 1st, 1903, and to report thereon to the Quarterly Meeting of the Council in May.

At the first Meeting of the Midwives Act, 1902, Committee, on May 1st, 1903, the Clerk laid before the Committee a Memorandum from the Local Government Board, on the Midwives Act, 1902; together with a letter to the County Medical Officer relating to the same. It was thereupon

> Resolved—That the consideration of the action to be taken by the Council for making known the provisions of the Act, and putting the same into operation, be adjourned until the Regulations of the Central Midwives' Board have been passed and issued.

At the next Meeting of the Midwives Act, 1902, Committee, on October 16th, 1903, the Clerk laid before the Committee the Rules framed by the Central Midwives Board and forms for giving effect thereto, and also the following

suggestions to County and County Borough Councils, issued by the Central Midwives Board in reference to the duties assigned to them under the Midwives Act, 1902.

SUGGESTIONS TO COUNTY AND COUNTY BOROUGH COUNCILS IN REFERENCE TO THE DUTIES ASSIGNED TO THEM UNDER THE MIDWIVES ACT, 1902.

1. The Central Midwives Board suggests to the County Councils the advisability of retaining the administrative duties assigned to them, under the Midwives Act, 1902, as far as possible in the hands of a Committee directly appointed by themselves. This will not only secure for the County Council more adequate control over the expenditure, but will tend also to prevent the possibility of local rivalries and jealousies interfering with the carrying out of the provisions of the Act.

2. The Board suggests further that the Health Committee of the County Council would form a suitable Committee to act as the Local Supervising Authority, with power to add to its number from outside the Council or otherwise.

In Counties where there is no County Medical Officer it is suggested that a Special Medical Officer be appointed to advise the Committee.

3. It is further suggested that supervision should be regarded as at least in part a medical duty, and that the Medical Officer of Health, or the Medical Adviser specially appointed, should be empowered to act as the Executive Officer of the Committee.

4. The Board suggests to County and County Borough Councils that, this being a matter almost solely affecting women, the Local Supervising Authority should, as sanctioned by the Act, include in any Committee it may appoint one or more women conversant with the needs of the poor in the district.

The Committee considered the Rules and suggestions of the Central Midwives' Board, and the following Resolutions were passed:—

Resolved—That the Clerk to the Council point out to the Central Midwives' Board that there appears to this Committee to be a defect in the Rules inasmuch

as no provision is made therein for payment of the Medical Practitioner called in by the Midwife, and enquire how the difficulty as to payment can be met where the Medical Practitioner declines to attend unless payment of his fee is guaranteed, and further enquire whether the County Council can pay such fee, not exceeding the scale allowed by the Poor Law Authority.

Resolved—That the Clerk ascertain from the Central Midwives' Board whether the item "Date of Engagement to attend" in paragraph 19 of the Rules means the date the Midwife is engaged, or the expected date of confinement, and also with respect to paragraph 20 enquire who the Board suggest should make the inspection of the articles mentioned therein.

The County Medical Officer of Health reported that he had obtained Returns of the names and addresses of the Midwives practising in all but two of the Boroughs and Districts in the Administrative County. According to these Returns the number of Midwives practising in the 52 Boroughs and Districts was 506. When the two Returns to come in were received, this number would probably be increased to 530.

The Committee then considered the desirability of recommending the County Council to exercise the powers conferred upon them by Section 9 of the Act, by delegating, with or without any restrictions or conditions as they may think fit, any power or duties conferred or imposed upon them, to any District Council within the County; and also communications on the subject from certain of the Boroughs in the County, and it was, thereupon

Resolved—That the Committee are of opinion that the Act can be most efficiently administered by the County Council delegating its powers on certain terms and conditions to the Municipal Boroughs and Urban and Rural District Councils in the County, and that the County Medical Officer of Health report to a future Meeting of the Committee the terms and conditions upon which he recommends such delegation should be made to those District Councils willing to accept the same.

At a Meeting of the Midwives Act, 1902, Committee on January 22nd, 1904, the County Medical Officer of Health reported upon the terms and conditions on which he recommended the powers and duties of the Council, under the Act,

to be delegated to the Borough and District Councils willing to accept the same. This Report was to the following effect:—

The County Medical Officer of Health considered the matter referred to him in the last quoted resolution, without being able to devise a satisfactory system of delegation, and then, having occasion to be in London on November 20th, he availed himself of the opportunity of calling on the Secretary of the Central Midwives' Board, at his office, 6, Suffolk Street, Pall Mall. The Secretary was briefly informed that the Cheshire County Council had formed a Midwives' Act Committee, and that the Committee were of opinion that the Act can be most efficiently administered by the County Council delegating its powers on certain terms and conditions to the Municipal Boroughs and Urban and Rural District Councils in the County, and that the County Medical Officer had been instructed to report on the terms and conditions upon which he would recommend such delegation. Finally, the Secretary was asked if he could give any indications as to what terms and conditions would be approved by his Board. He said that powers which were delegated to Town Councils and District Councils would be theirs until they were withdrawn, and if powers were delegated to the Borough and District Councils in a County, they would be the Local Supervising Authorities over Midwives within their respective areas, they would investigate charges of mal-practice, negligence or misconduct, suspend any midwife from practice if such suspension appears necessary, report at once to the Central Midwives' Board the name of any Midwife practising in their area convicted of an offence, keep the local register of Midwives, supply information therefrom to the Central Midwives' Board, report the death of any midwife, or change of name or address, and give due notice of the effect of the Act as far as practicable to persons using the title of midwife, &c. As Local Supervising Authorities, the Town Councils and District Councils would be in direct communication with the Central Midwives' Board, and there would be ordinarily little left for the County Council to do, except, perhaps, to withdraw powers misused or neglected. The Secretary added that the Central Midwives' Board were in favour of County Councils retaining the administrative duties assigned to them in the Midwives' Act, as far as possible in the hands of a Committee directly appointed by themselves; he asked what objection there was to this course. It was explained to the Secretary that the County Council could not very readily make arrangements to secure a proper inspection of every midwife's case book, bag of appliances, &c., and when thought necessary, an inspection of her place of residence, and an investigation of her mode of practice. In reply, the Sec-

retary said it had not been suggested by the Central Midwives' Board that these inspections and investigations should be made by the County Medical Officer of Health, but by the District Medical Officers of Health. The County Council could make suitable terms with such Medical Officers of Health for the carrying out of the required inspections and investigations, who, in this respect would be, so to speak, assistants to the County Medical Officer.

TERMS AND CONDITIONS UPON WHICH POWERS AND DUTIES MAY BE DELEGATED.

The County Medical Officer of Health, as instructed, submits the following as the terms and conditions upon which he recommends that the duties assigned under the Midwives Act may be delegated to Town Councils and District Councils.

1. That the Town Council or District Council is willing to accept the powers and duties conferred or imposed under the Midwives Act, which it is proposed to delegate.

2. That the Town Council or District Council undertake to make use of the powers and discharge the duties delegated, in the manner set forth in the Midwives Act and Rules made thereunder.

3. That during the month of January of each year, the Town Council or District Council supplies to the Clerk (or Medical Officer of Health) to the County Council the following information in respect of the year immediately preceding, viz.: —

(a) The name and address of every practising midwife residing in the Borough or District, who has been admitted to the roll of midwives under Section 6 (1) and (2) of the Midwives Act.

(b) The name and address of every midwife practising in the Borough or District, but residing elsewhere, who has been admitted to the roll of midwives under Section 6 (1) and (2) of the Midwives Act.

(c) The number of charges of malpractice, negligence, or misconduct on the part of any midwife practising within the Borough or District, investigated.

(d) The number of such charges in which a *prima facie* case was established.

(e) The number of cases in which a midwife has been suspended from practice, in order to prevent the spread of infection.

(f) The number of cases in which a midwife practising in a Borough or District has been convicted of an offence, the nature of the offences committed, and the number of midwives convicted of each offence.

(g) The name and address of any practising midwife who died during the year in the Borough or District; and any change in the name or address of any midwife residing in the Borough or District which has taken place during the year.

(h) The number of inspections made of midwives' case books, bag of appliances, &c., and the number of inspections made of midwives' places of residence, and the number of investigations made as to mode of practice.

(i) The number of deaths of mothers and of infants occurring in the practice of midwives in the Borough or District, and the number of these occurring before the attendance of a registered medical practitioner.

(j) The number of still births occurring in the practice of midwives in the Borough or District, and the number of these occurring before the attendance of a registered medical practitioner.

(k) The number of cases of puerperal fever occurring in the practice of midwives in the Borough or District, and the number of these occurring before the attendance of a registered medical practitioner.

(l) The number of cases attended solely by Midwives in the Borough or District.

(m) A brief general report on the working of the Midwives Act in the Borough or District.

4. That the Town Council or District Council agree that the expenses they will be entitled to charge for putting the Midwives Act into operation shall not exceed a maximum to be determined.

AN ALTERNATIVE SUGGESTION.

Should the Midwives' Act Committee be disposed to reconsider the question of the expediency of delegation, the County Medical Officer suggests that it would probably be possible for the County Council to retain the administrative

duties in the hands of a Committee directly appointed by themselves, and to make arrangements with the Borough or District Medical Officers of Health to inspect the Midwives' case books, bags of appliances, places of residence, and mode of practice, by paying each of the said Medical Officers of Health an annual sum of (say) 21/- for every practising Midwife resident in his Borough or District, on the Medical Officer of Health agreeing to furnish an Annual Report to the County Council on the lines indicated above.

The Committee considered this Report, and the following Resolution was passed:—

> Resolved—That the Councils of the several Municipal Boroughs and Urban and Rural Districts in the Administrative County be invited to appoint the Chairman or some other member of their respective Health or Sanitary Committees and their respective Medical Officers of Health to attend a Conference with the members of this Committee to generally discuss the administration of the Act within the County, and in particular the terms upon which they would be prepared to recommend their respective Authorities to assist in carrying out the Act within the Areas under their respective jurisdictions.

Representations of the Councils of the Municipal Boroughs and Urban and Rural Districts were accordingly appointed, and these were received in Conference by the Committee on April 21st, 1904. After the County Medical Officer of Health had explained the provisions of the Act, and the Clerk to the Council had given information as to the steps which the County Council had taken in connection therewith, the Committee proceeded to discuss with the Representatives present the best means to be adopted in working the Act, *i.e.*, whether by the County Council delegating its powers to the Borough and District Councils, or by the County Council administering the Act with the co-operation of the Borough and District Councils, and with the assistance of their Medical Officers of Health, and there being a general consensus of opinion that the latter course was the preferable one to adopt, the following resolution was passed (*nem con*) by the Representatives present:—

> "That the Representatives of the Municipal Urban "and Rural District Councils present at this Confer- "ence are prepared to recommend their respective "Councils to assist the County Council in carrying out "the Midwives Act, 1902, within their respective juris-

"dictions by permitting their respective Medical "Officers of Health to perform the following duties, "viz.:—

"(a) Inspection of Midwives' case books.

"(b) Inspection of bags of appliances.

"(c) Inspection of places of residence.

"(d) Inspection of mode of practice.

"(e) Such other analagous duties as the County Medical Officer of Health may prescribe,

"and on such terms as may be agreed between the "County Council and each District Medical Officer of "Health."

On the same day (April 21st, 1904) the Midwives Act, 1902, Committee

Resolved—That the County Medical Officer of Health consider and report to a Meeting of this Committee to be held on the 29th inst., the remuneration which should, in his opinion, be paid to the District Medical Officers for carrying out the duties referred to in the foregoing resolution, and to what extent such duties should be performed in the case of those Midwives who practice in but are not resident within the Administrative County.

At a Meeting of the Midwives Act, 1902, Committee, on April 29th, 1904, the County Medical Officer of Health reported as to the remuneration which should, in his opinion, be paid to the District Medical Officers of Health for carrying out the duties enumerated in the resolution passed at the Conference, and as to other matters. This Report was to the following effect:—

As to the amount of remuneration which, in the opinion of the County Medical Officer it would be proper for the County Council to pay Borough and District Medical Officers of Health for services it is intended that they should perform in assisting the County Council to carry out the Midwives Act, 1902, within their respective Areas.

The proper amount of remuneration to be paid to each Medical Officer of Health may be tentatively fixed at the annual sum of one guinea and a half, in respect of each woman residing in the Borough or District of the Medical Officer of Health, whose name is on the

official role of Midwives on 31st day of January in each year.

Provided that, as there may be some District Medical Officers of Health in whose District or Districts only one Midwife resides, or in which there is no Resident Midwife, it seems proper that the minimum annual sum to be paid to each Medical Officer of Health in the Administrative County should be in no case less than five guineas.

The County Medical Officer of Health recommends that each Borough or District Medical Officer of Health be requested to send in his claim for fees during January in each year, together with his Report relating to the provisions of the Midwives Act, 1902, and his action thereunder, on the lines laid down in the County Medical Officer's Second Report on the Midwives Act, and the action he recommends the County Council to take thereon. On receipt of the Report the account would be examined and certified.

As the duties to be undertaken by Borough and District Medical Officers of Health in carrying out the provisions of the Midwives Act will, in many respects, be similar to their other duties as Medical Officers of Health, it seems proper that the above fees should ordinarily include office expenses and travelling, but if (especially in Rural Districts) journeys have to be made in preliminary investigations as to mal-practice, negligence, or misconduct of a midwife, &c., it seems fair that the expense of such journeys should be charged to the County Council.

As to how it is proposed to deal with Midwives practising but not residing in the Administrative County.

As the provisions of the Midwives Act are being carried out, or will shortly be carried out, in all Boroughs and Districts bordering on as well as within the Administrative County, the method of dealing with Midwives practising but not residing in the County will presumably be by means of inter-communication between Medical Officers of Health. For example—A Medical Officer of Health within this County has a case of puerperal fever in his District reported to him, the patient having been attended in her confinement by a Midwife residing in a District outside the County. He at once furnishes particulars to the Medical Officer

of Health for the District in which the Midwife resides, and all necessary action to prevent the Midwife spreading infection will be promptly taken by the Medical Officer of Health for that District in which the Midwife resides.

It might be urged that a Medical Officer of Health was at a disadvantage because he was not in a position to inspect the case book, bag of appliances, and place of residence of a Midwife who occasionally practised in his District. However, the case book, bag of appliances, and place of residence would not escape inspection; it would be all properly done in the District in which the Midwife resided. Inspection would be not less thorough and complete because done by the Medical Officer of Health for the Borough of Stockport instead of the Medical Officer of Health for Bredbury. Action taken after the occurrence of puerperal fever would not be less efficient because taken by the Medical Officer of Health for Birkenhead instead of the Medical Officer of Health for Higher Bebington.

As to the duties the Borough and District Medical Officers of Health within the Administrative County should be asked to perform, as regards Midwives residing within their respective Areas, and as regards the practice of Midwives, when within their respective Areas, who reside elsewhere.

These may be prescribed as follows:—

1.—To exercise general supervision over all Midwives residing within their area, and over the practice of Midwives, when within their area, who reside elsewhere.

2.—To make a preliminary investigation as regards charges of mal-practice, negligence or misconduct, on the part of any Midwife residing or practising within their area, and to report the result of such preliminary investigation to the County Medical Officer.

3.—To suspend any Midwife from practice, in accordance with the rules under the Midwives Act, if such suspension appears necessary, in order to prevent the spread of infection.

4.—To report at once to the County Medical Officer the name of any Midwife practising in their area who, to their knowledge, is convicted of an offence.

5.—To report to the County Medical Officer the death of any Midwife, or any change in the name or address of any Midwife residing in their area as soon as they are aware of the same.

6.—To furnish a list (if this has not been already furnished) to the County Medical Officer of all persons at present using the title of Midwife within their area.

7.—To inspect from time to time the case books, bags of appliances, and places of residence of Midwives residing within their area.

8.—To investigate the mode of practice of all Midwives practising within their area.

9.—To report forthwith to the County Medical Officer any suspension of a Midwife from practice, and the reasons for such suspension.

10.—To communicate with the County Medical Officer in any matter of doubt or difficulty arising in connection with the Midwives Act, or the Rules framed thereunder.

As to the duties which the County Council, as the Local Supervising Authority over Midwives within the County (acting through their Midwives Act, 1902, Committee), and the County Medical Officer will perform.

The County Medical Officer suggests that the County Council will do well to investigate, by means of a Member or Members of the Midwives Act Committee, appointed for the purpose, charges of malpractice, negligence, or misconduct on the part of any Midwife within the County, and should a *prima facie* case be established, report the same to the Central Midwives' Board.

The County Medical Officer will undertake to report at once to the said Board the name of any Midwife residing or practising in the County, who, to his knowledge, has been convicted of an offence.

The County Medical Officer will undertake, during the month of January in each year, to supply the Secretary of the Central Midwives' Board with the names and addresses of all Midwives who, during the preceding year, have notified their intention to practice within any Borough or District in the County, and to keep a current copy of the Roll of Midwives accessible at all reasonable times for public inspection.

The County Medical Officer will undertake to report at once to the Central Midwives' Board the death of any Midwife

or any change in the name and address of any Midwife, within the County, so that the necessary alterations may be made in the Roll of Midwives.

Finally, the County Medical Officer suggests that the County Council will do well to give due notice of the effect of the Midwives Act, so far as practicable, by means of posters posted in public places, in every Borough or District within the County, and undertakes himself to give due notice of the effect of the said Act by circular letter (according to a form supplied by direction of the Central Midwives' Board) to all persons within the County, whose names and addresses are supplied to him as at present using the title of Midwife.

The Committee considered this Report, and it was—

Resolved—That such Report be received and the recommendations and suggestions contained therein be adopted with the exception of the following paragraph, viz.:—

> The County Medical Officer suggests that the County Council will do well to investigate by means of a Member or Members of the Midwives Act Committee, appointed for the purpose charges of malpractice, negligence, or misconduct on the part of any Midwife within the County, and should a *prima facie* case be established, report the same to the Central Midwives' Board.

And that in lieu of such suggestion the investigation of the charges referred to be made by the County Medical Officer of Health, who shall report the result thereof to the Committee, and furnish a copy of his Report to the Midwife concerned, and at the same time intimate to her the date and time and place of the Meeting of the Committee before which the Report will be laid, so that she may attend such Meeting if she desires to do so.

At a meeting of the Midwives Act, 1902, Committee on July 15th, 1904, the Clerk to the Council reported that, with the exception of the Northwich Urban District Council, the whole of the District Councils in the County had passed Resolutions approving of the Resolution passed at the Conference held on the 21st April last.

The County Medical Officer stated that he had issued the following documents to all the Midwives in the County whose names had been supplied to him by the District Medical Officer of Health, and generally reported the action taken by him under the Act since the last Meeting, viz.:—

Officer of County Medical Officer of Health,
7, Shrewsbury Road,
Birkenhead,
July 14*th*, 1904.

Mrs.....

Madam,

Your name has been given to me as a reputed Midwife practising or desiring to practice within the Administrative County of Chester, and I have been instructed by the County Council to send you the enclosed notice, drawing attention to the chief provisions of the Midwives Act, 1902, which materially affects the legal position of all Midwives.

I am also sending you two forms, viz., Form VI. and Form VIII. If you desire to be certified under the Midwives Act, on the ground of holding a Certificate in Midwifery from one of the bodies specified in the Act, or a Certificate approved by the Board, will you fill in Application Form VI., and send to the Secretary of the Central Midwives' Board, 6, Suffolk Street, London, S.W.? If you desire to be certified under the Midwives Act on the ground of having been in *bona fide* practice as a Midwife, for at least one year prior to July 31st, 1902, will you fill in Application Form VIII., and send it to the Secretary of the Central Midwives' Board, 6, Suffolk Street, London, S.W.?

Should the Central Midwives' Board grant your application, and enter your name on the Midwives' Roll, you will receive a Certificate to this effect in due course. On obtaining this Certificate I have to request that you will notify me that you have received it, and furnish me with your Christian name and surname, your present address in full, and the number of your Certificate, and date thereof, in order that I may enter your name on the County Register of Midwives.

On sending either of the Application Forms to the Secretary of the Central Midwives' Board, the necessary Certificate or Certificates must be enclosed, together with a postal order for ten shillings.

On notifying to me that you have received your Certificate you are not required to enclose any Certificate, and you will have your name and address entered on the County Register of Midwives, without any fee or charge whatever.

I am, Madam,
Yours faithfully,
FRANCIS VACHER.

CHESHIRE COUNTY COUNCIL.

MIDWIVES ACT, 1902.
(2 Edw. 7, c. 17).

The Cheshire County Council desires to draw attention to the chief provisions of the Midwives Act, 1902, which materially affects the legal position of all Midwives.

1. After the 1st April, 1905, no woman may call herself a midwife unless certified as the Act provides.

2. After the 1st April, 1910, no woman may practice (*i.e.*, habitually and for gain attend women in childbirth otherwise than under the direction of a qualified medical practitioner) unless certified as the Act provides.

3. Any woman who before the 31st March, 1905, claims to be certified under the Act may be so certified if

(*a*) She holds a Certificate in Midwifery from the Royal College of Physicians of Ireland, or from the Obstetrical Society of London, or the Coombe Lying-in Hospital and Guinness's Dispensary, or the Rotunda Hospital for the Relief of the Poor Lying-in Women of Dublin.

Or,

(*b*) She holds such other Certificate in Midwifery as the Central Midwives' Board may approve.

Or,

(*c*) She satisfies the Central Midwives' Board that she has been in *bonâ fide* practice as a midwife for at least one year prior to the 31st July, 1902, and that she bears a good character.

4. A woman not included within one of these three classes will be required to pass the examination of the Central Midwives' Board before obtaining a Certificate.

5. Applications to be certified must be made to the Central Midwives' Board in accordance with the rules and regulations to be prescribed by the Board, and such fees will be payable for the examination and the Certificate as the Privy Council may sanction.

6. The names of all certified midwives will be entered on the Midwives' Roll.

7. Every certified midwife must before commencing to practise, or holding herself out as practising, give notice in writing, on the prescribed form, to the local supervising

authority, and must give a similar notice in the month of January in every year during which she continues to practise.

8. No certified midwife may employ an uncertified substitute.

9. A midwife may be suspended from practise in order to prevent the spread of infectious disease,or may be removed from the roll for disobeying the rules and regulations of the Central Midwives' Board, or for other misconduct.

10. Penalties are prescribed for any infringement of the foregoing provisions (1) (2) and (7); also for obtaining a certificate by false representation, or for wilful falsification of the Midwives' Roll.

11. An appeal lies to the High Court of Justice from any decision of the Central Midwives' Board removing a midwife's name from the Roll, and to the Court of Quarter Sessions from any Summary Conviction for an offence under the Act.

REGINALD POTTS,

Clerk of the County Council of Cheshire, being the Local Supervising Authority under the Act.

RESOLVED—That the action taken by the County Medical Officer of Health to give notice of the provisions of the effect of the Act to persons at present using the title of Midwife be approved, and which the Committee deem to be sufficient.

At a Meeting of the Midwives Act, 1902, Committee, on October 21st, 1904, the County Medical Officer of Health reported on the progress of the Registration of Midwives within the County, for the Quarter ending September 30th. Though he had originally sent out 533 circulars (accompanied by forms of application to be registered) to reputed Midwives, whose names and addresses had been given him, and since then had issued 47 more circulars (accompanied by forms) to other reputed Midwives, whose names and addresses had been more recently supplied, only 41 women had applied to be registered and been entered in the County Register.

A printed list of the Midwives residing and practising in the County of Chester, at the close of the year 1905, was prepared by the County Medical Officer of Health, and presented to the Midwives Act, 1902, Committee of the County Council, on January 19th, 1906. This list was sent to every Member of the County Council, and to the Medical Officers of Health for every Borough and District in the County. A copy was also supplied to every Midwife whose name appeared on the list. The list gives the full name and address of every Midwife, the number of her Certificate, the Borough or District to which she belongs, the date of her enrolment and qualification.

After considering this Report, the Committee

RESOLVED—That the County Medical Officer of Health call the attention of the District Medical Officers of Health to the small number of Midwives registered up to the present time, and request them to explain to those Midwives in their respective districts who have not already been registered that they will be precluded by the Act from calling themselves Midwives after April 1st, 1905, unless they are in the meantime duly registered.

A circular letter was accordingly addressed to Medical Officers of Health for Boroughs and Districts in the County, and steps were taken by many of them to urge the Midwives, within their respective areas to be registered. At the end of the year 1904, there were 152 women entered on the County Register of Midwives.

At the close of the first Quarter of 1905, there were 245 women entered on the County Register of Midwives. At the close of the second Quarter of 1905, this number was increased to 320, at the close of the third Quarter of 1905, this number was increased to 361, and at the close of the last Quarter of 1905, this number was increased to 435.

The 435 Midwives in the County Register, at the close of 1905, were distributed over the Administrative County as follows:—

MUNICIPAL BOROUGHS.

Congleton	18	Macclesfield	11
Crewe	31	Stalybridge	23
Dukinfield	9		
Hyde	29		121

OTHER URBAN DISTRICTS.

Alderley Edge	2	Hoylake and West Kirby	6
Alsager	2	Knutsford	6
Altrincham	10	Lymm	5
Ashton-on-Mersey	3	Marple	0
Higher Bebington	2	Middlewich	3
Lower Bebington	3	Mottram	2
Bollington	2	Nantwich	4
Bowdon	3	Neston and Parkgate	3
Bredbury and Romiley	7	Northwich	11
Bromborough	2	Runcorn	9
Buglawton	6	Sale	7
Cheadle and Gatley	2	Sandbach	3
Compstall	1	Tarporley	2
Ellesmere Port and Whitby	3	Wallasey	30
Hale	2	Wilmslow	4
Handforth	0	Winsford	19
Hazel Grove and Bramhall	6	Yeardsley-cum-Whaley	2
Hollingworth	2		
Hoole	1		175

RURAL DISTRICTS.

Bucklow	11	Northwich	21
Chester	5	Runcorn	16
Congleton	16	Tarvin	12
Disley...	3	Tintwistle	1
Macclesfield	14	Wirral	14
Malpas	6		
Nantwich	20		139

As regards the qualifications which entitled these 435 Midwives to be enrolled, 349 claimed to be registered as they were in *bona fide* practise as Midwives in July, 1901, and 82 claimed to be registered on account of their holding certificates in Midwifery, from approved Schools for Midwives. Four of the Midwives were not enrolled under Section 2 of the Midwives Act, but on account of having passed the examination of the Central Midwives' Board. Thus upwards of 80·2 per cent. of the Midwives in the County Register were unable to give evidence of having been trained and certified at an approved School of Midwives.

As after 1st April, 1905, no woman may call herself a Midwife unless certified as the Act provides, this appeared to be the date on which to commence the systematic supervision of these women. Accordingly on March 31st, a circular letter was addressed to the Medical Officer of Health of every Borough and District in the Administrative County. In this letter it was stated that the County Council, being the Supervising Authority under the Act, were required to make arrangements to secure a proper inspection of every midwife's case-book, bag of appliances, &c., and when thought necessary an inspection of her place of residence, and an investigation of her mode of practise. The arrangement which the County Council thought best was that the Medical Officers of Health for Boroughs and Districts should make these inspections and investigations. Medical Officers of Health were therefore asked to undertake these duties, acting thus, on behalf of the Supervising Authority, as Assistants to the County Medical Officer of Health, and reporting to him thereon. Quotations were then made from the County Medical Officer's Report, presented to the Midwives Act Committee on April 29th, 1904, as to duties, remuneration, &c.

From April 1st, 1905, all Medical Officers of Health for Boroughs and Districts in Cheshire have exercised general supervision over all Midwives residing in their several areas, and over the practise of Midwives when within their areas, who reside elsewhere.

Shortly after the close of the year 1905, all the Medical Officers of Health for Boroughs and Districts in the County submitted brief Reports (on forms supplied) with reference to the Midwives in their several areas, for the period extending from

April 1st to December 31st, 1905. It was requested that each Report should contain replies to the following questions:—

Name of Borough or District.

1. What is the number of Midwives in the County Register residing in the Borough or District?
2. Do all these Midwives keep case books or registers, and are they fairly well kept?
3. Are there any Midwives who cannot write, and if so, how are their case books or registers kept?
4. What is the total number of cases attended by registered Midwives during the period under review?
5. How many records of sending for Medical help have been received?
6. How many deaths of mothers which have occurred before the attendance of a Medical Practitioner have been notified by Midwives?
7. How many deaths of infants which have occurred before the attendance of a Medical Practitioner have been notified by Midwives?
8. How many still-births have been notified by Midwives? A child is deemed to be still-born when it has not breathed or shown any sign of life after being completely born.
9. How many cases of puerperal fever are known to have arisen in cases attended by registered Midwives?
10. How many cases of other infectious disease are known to have occurred in cases attended by registered Midwives?
11. Are facilities afforded in Borough or District for the disinfection of Midwives who have been attending cases of puerperal fever or other infectious disease, or cases in which there are foul-smelling discharges?
12. In how many instances has the conduct of a Midwife been reported to the Supervising Authority and made the subject of special inquiry?
13. How many Midwives have been suspended from practise?

14. Are all the appliances, &c., which are required in the Rules to be taken to a case of confinement, provided by each Midwife and kept clean and in order?

15. Are the Midwives' houses or lodgings in a fairly sanitary condition and kept clean?

General Remarks with reference to Midwives.

Particulars contained in the replies to the first question have already been given. It will be seen that the areas in which were the largest number of Midwives at the end of the year were the Borough of Crewe (31), the Urban District of Wallasey (30), and the Borough of Hyde (29), while in two Urban Districts—Handforth and Marple—there were no Midwives.

The replies to question two are not, as a whole, quite satisfactory. In Crewe there were 12 women without registers, but of these 7 had no cases of their own, and the remaining 5 are said to be getting registers. With one exception the registers are fairly well kept. At Dukinfield 4 Midwives had no registers at the end of the year, but were getting them. The others are not good book-keepers. At Hyde all the Midwives except 2 have case-books or registers fairly well kept. At the Borough of Macclesfield all the Midwives have registers, but in one instance the book has not been well kept. At Alsager all but 1 of the Midwives keep registers, but entries of cases attended as Nurses and as Midwives are "mixed up together." At Altrincham the Midwives in practise all have registers and keep them well. At Ashton-upon-Mersey only one Midwife has a register and keeps it well; the 2 other women are said to be getting registers. At Higher Bebington 1 of the 2 Midwives had just obtained a register at the end of the year, the other was about to obtain one. At Ellesmere Port all but 1 of the Midwives have registers and keep them fairly well, the other woman will get a register. At Nantwich Urban District all the Midwives have case-books, but only 1 kept a complete record in 1905.

In Northwich Urban District all the Midwives have books, which in the majority of instances are very well kept. One or two women need a good deal of coaching yet. At Tarporley no register has been kept, but the matter will have attention. At Wallasey in two cases registers have not been provided, but they will be. The other Midwives keep their registers fairly well. At Wilmslow two of the Midwives keep their registers very well, the other two keep registers, but not properly. At Winsford all the Midwives have registers, but few are really well kept. In Bucklow Rural District most of the Midwives keep their registers fairly well. In Chester Rural District all the Midwives but one have registers and keep them fairly well. At Disley the cases

are entered on sheets of paper. In Macclesfield the registers, "considering everything," are well kept. At Malpas the Midwives "all say they keep the register." In Nantwich Rural District the Midwives, with one exception, have registers or case-books, and they are fairly kept. The excepted woman has provided a register to be used in 1906. In Runcorn Rural District all but three Midwives have registers. One or two of the registers are really well kept, and the majority are kept fairly. In Tarvin Rural District 2 Midwives have no registers, and 3 only got them at the end of the year. The remaining women keep their registers fairly well. In Wirral Rural District the Midwives (with one or two exceptions) have registers, which they keep fairly well. The reports from the Boroughs and Districts not so far referred to, state that registers have been in use and fairly well kept.

The answers to question 3 indicate that many of the Midwives in Cheshire cannot write. In the Borough of Congleton there are 7 of these. Four get their daughters to keep their registers, one employs her sister in this way, and two other friends. In Crewe, there are 10 Midwives who cannot write, and in each case the register is kept by a daughter or some one else in the house. At Dukinfield are 2 Midwives who cannot write—one employs a daughter and the other a friend to keep the register. At Hyde are 8 Midwives who cannot write, and some member of the family has to enter particulars in their books. In Macclesfield Borough are two Midwives who cannot write, so get their daughters to write for them. At Stalybridge are 5 Midwives who cannot write. In two instances a daughter keeps the register, in two a son keeps the register, and in one instance the register is kept by a neighbour. At Alsager 1 Midwife cannot write, so she makes "marks to jog her memory, and her daughter later fills in particulars." At Bredbury is a Midwife who cannot write, and gets her husband to write for her. A Midwife at Buglawton, who cannot write also gets her husband to write for her. At Knutsford is one Midwife who cannot write, and keeps her register "by the aid of neighbours.' At Lymm is a Midwife who cannot write, and the register is kept by her daughter. At Middlewich the only Midwife who cannot write gets the register written "by junior members of her family." In the town of Nantwich 4 of the Midwives cannot write, and their record appears not to have been kept in 1905. In the towns of Northwich and Runcorn some of the Midwives cannot write (the number is not stated), and in each case the register is kept by members of the family. At Sale is 1 Midwife, whose books are kept "by her grown-up children." At Sandbach are 2 Midwives who cannot write, and their "children keep the registers." At Winsford 7 of the Midwives are illiterate and 3 partially so; "registers are written (more or less) by

relatives or neighbours." At Yeardsley-cum-Whaley is one Midwife who cannot write, and employs her daughter to write for her. In Bucklow Rural District are 2 Midwives who cannot write, and get their registers written "by the aid of neighbours." The number of Midwives who cannot write in Congleton Rural District and Macclesfield Rural District is not stated, but it is mentioned that some get their books kept by their daughters. In Nantwich Rural District 3 of the Midwives are unable to write well enough to keep their registers, and one of them gets her book kept by another midwife, the second by her son, and the third by her brother. In Northwich Rural District are "several" Midwives who cannot write, and their books are kept by relatives. In Runcorn Rural District are 5 Midwives who cannot write, their books are fairly well kept by their daughters or husbands. In the Tintwistle District is 1 woman who cannot write, and her book is kept for her by a neighbour. In Wirral Rural District is 1 Midwife who cannot write, and she kept no register in 1905.

The answers to Question 4 show that the total number of cases attended by Midwives in Cheshire during the period under review (9 months) was as follows :—

MUNICIPAL BOROUGHS.

Congleton	137	Macclesfield	513
Crewe	688	Stalybridge	399
Dukinfield	240		
Hyde	540	Total	2517

OTHER URBAN DISTRICTS.

Alderley Edge	23	Hoylake and West Kirby	109
Alsager	21	Knutsford	66
Altrincham	209	Lymm	21
Ashton-upon-Mersey	18	Marple	0
Higher Bebington	13	Middlewich	110
Lower Bebington	114	Mottram	62
Bollington	73	Nantwich	(?)
Bowdon	14	Neston and Parkgate	34
Bredbury and Romiley	52	Northwich	306
Bromborough	56	Runcorn	145
Buglawton	19	Sale	157
Cheadle and Gatley	0	Sandbach	112
Compstall	9	Tarporley	2
Ellesmere Port and Whitby	39	Wallasey	616
Hale	0	Wilmslow	41
Handforth	11	Winsford	155
Hazel Grove and Bramhall	(?)	Yeardsley-cum-Whaley	68
Hollingworth	42		
Hoole	20	Total	2737

RURAL DISTRICTS.

Bucklow	56	Northwich	259
Chester	46	Runcorn	223
Congleton	115	Tarvin	85
Disley	17	Tintwistle	7
Macclesfield	130	Wirral	118
Malpas	55		
Nantwich	191	Total	1302

Thus from April 1st to December 31st, 1905, there were, in the Administrative County, 6556 women who were ministered to during parturition by Midwives. This number is equal to 8741 for the whole year, which indicates that about 5626 of the parturient women in this country are attended during confinement by Midwives. As it is admitted that the records of some Midwives could not be obtained in 1905, the actual proportion of women attended during confinement, is somewhat larger.

As to records of sending for medical help, the answers to Question 5 show that 263 were received from Midwives in the Borcughs, 295 from Midwives in other Urban Districts, and 97 from Midwives in Rural Districts. In some of the Boroughs many of those notices were received, thus in Hyde there were 127, and in Dukinfield 67, but in Crewe there was only one. In Northwich Urban District 103 notices were received, and in Northwich Rural District 59 notices, but in 12 Urban Districts and 4 Rural Districts not one notice was received.

The information obtained from the replies to question 6 is quite satisfactory. There is no evidence that in any single instance a lying-in woman (attended by a midwife) died before being seen a Medical Practitioner.

The replies to question 7 are, generally, satisfactory. At Hyde, Stalybridge and Bollington the death of an infant before being seen by a Medical Practitioner was notified by a midwife. In Northwich Urban District 2 such cases were notified, and in Alsager, 3 such cases.

The number of still-births notified by midwives in Cheshire during the 9 months under review was as follows:—69 in the Boroughs, 40 in the other Urban Districts, and 16 in the Rural Districts—in all 125.

The number of cases of puerperal fever known to have occurred among lying-in women attended by midwives in Cheshire, during the nine months under review, was 34. Twenty of these occurred in the Boroughs, 11 in the other Urban Districts, and 3 in the Rural Districts.

The cases of other infectious disease known to have occurred among lying-in women, attended by midwives in Cheshire, during the nine months under veview, were two cases of syphilis.

As regards facilities afforded for the disinfection of cases requiring it, all the Boroughs except Stalybridge have facilities, and the Stalybridge Corporation are about to erect well-equipped disinfection buildings. A very large number of the other Urban

Districts have no facilities at present. According to the Reports of the Medical Officers of Health facilities are not afforded in the following Districts, viz. :—Alsager, Ashton-upon-Mersey, Bollington, Bowdon, Bredbury and Romiley, Cheadle and Gatley, Compstall, Hale, Handforth, Hollingworth, Hoole, Knutsford, Marple, Middlewich, Mottram, Northwich, Runcorn, Sale, Sandbach, Wilmslow, Winsford and Yeardsley-cum-Whaley. The Rural Districts which are without these facilities are Bucklow, Congleton, Disley, Macclesfield, Marple, Northwich and Tintwistle.

The only instance in which the conduct of a Midwife has been reported to the County Medical Officer of Health was in May, in connection with the occurrence of puerperal fever at Middlewich. The County Medical Officer inquired into the charge of negligence against this woman at her house, in company with the District Medical Officer of Health. After this woman had ceased working for some days, and been efficiently disinfected, she was permitted to resume her employment.

As regards suspension from practice, this appeared to be called for in a few cases. In the Borough of Congleton, 2 women were suspended from practice, each for 6 weeks, in connection with 2 cases of puerperal fever. At Altrincham, a Midwife was suspended for ten days in connection with a case which was suspected to be puerperal fever. In Northwich Urban District, 2 Midwives were each suspended from practice for ten days owing to the occurrence of puerperal fever, and at Runcorn and Winsford Urban Districts, a Midwife was suspended for a short time owing to the same cause. At Sale, a Midwife was suspended 6 weeks after attending a case of puerperal fever. At Wallasey one Midwife was suspended for a fortnight owing to a case of puerperal fever. No Midwife was suspended in any of the Rural Districts except one in Tintwistle, who was suspended till free from risk of conveying puerperal fever.

The answers to Question 14 are certainly not generally satisfactory. In the Borough of Congleton 4 Midwives have not got all the appliances required, but these women, though registered Midwives, have not had sole charge of cases. At Crewe all the Midwives have the proper appliances, and keep them clean. At Dukinfield the required appliances have not all been obtained, but those provided are clean. At Hyde most of the Midwives have all the appliances required, and keep them clean and in order. In the Borough of Macclesfield, the Midwives are only beginning to comply with recent requirements. At Stalybridge, the majority of Midwives are supplied with required appliances, but a few are without thermometers and catheters. At Ashton-upon-Mersey, 2 Midwives have not all appliances. At Higher Bebington, one Midwife has no thermometer. At Bredbury and Romiley, all

appliances are provided, except thermometers and catheters, which the women do not know how to use. At Compstall, the only Midwife has not all the appliances she should have. At Mottram, and Hollingworth, the Midwives have all appliances but thermometers. At Hoylake and West Kirby, the Midwives are not all fully equipped. At Knutsford and Lymm, the Midwives are fairly equipped. At Middlewich, one of the Midwives "has no thermometer or catheter, and could not use them if she had." At Neston and Parkgate, Midwives are not fully equipped, but keep their appliances clean. In Northwich Urban Districts, many Midwives do not possess thermometers, and a few have no douche or catheter. At Wilmslow, 2 Midwives are incompletely equipped. At Winsford, the Midwives are not provided with all appliances required. The Midwives in Bucklow and Chester Rural Districts are fairly well equipped. In Macclesfield Rural District, "speaking generally," appliances are provided and kept clean. At Malpas, not all appliances are provided. In Nantwich Rural District, some of the Midwives are without a douche or catheter. At Northwich Rural District, adequate appliances are provided almost without exception. In Runcorn Rural District, compliance with the rule as to appliances is as yet incomplete. In Tarvin and Wirral Rural District, not all appliances are provided, but most of them are. At Tintwistle, all appliances are provided but thermometers.

The answers to Question 15 show that the midwives' houses or lodgings are in a fairly sanitary condition and kept clean. A midwife's house at Wilmslow and some of the houses occupied by midwives at Winsford were, however, found to be not quite clean and in order.

Under the heading "General remarks under reference to midwives," are a few observations of some interest. The Medical Officer of Health for the Borough of Congleton draws attention to the large number (7) of the midwives in the town who act solely as monthly nurses. The Medical Officers of Health of other districts refer to the fact that many midwives never undertake entire charge of a patient. These women have had their names enrolled by the Central Midwives' Board, in order "to preserve their rights," and in order to enable them to act as Midwives when they fail to obtain employment as monthly nurses. The Medical Officer of Health for Crewe notes the great improvement which has taken place—"the women seem anxious to comply with all the requirements of the Central Midwives' Board." At Crewe, the Isolation Hospital is available for cases of puerperal fever. At Dukinfield, not one of the Midwives has had any training at a school of Midwifery, and they require much instruction. The work of instruction

has been begun, and much improvement may be looked for shortly. At Hyde also the midwives are for the most part untrained; 8 women are absolutely illiterate, and two-thirds of the remainder are as nearly illiterate as possible. With few exceptions the women have been practising for years, and it is difficult to get them to understand the necessity of departing from customs they have followed so long. In some cases the midwife does not possess a catheter or thermometer, or know how to use them. At Stalybridge the women "as a class are of the better type of ordinary midwives." However, "one was directly engaged in the undertaking business, another was agent for a firm of undertakers, while a few others were in the habit of going about laying out the dead." All work of this nature, of course, had to be promptly discontinued. This is also referred to by the Medical Officer of Health for the town of Nantwich, who finds its "impossible to be certain that midwives do not lay out dead bodies," though he has warned them repeatedly not to do so. At Bredbury and Romiley all but one of the midwives are "quite untaught." They are more attentive to their work since they have been under regular supervision, but their "ignorance of their duties is surprising." The Medical Officer of Health for Hollingworth, Mottram and Tintwistle refers to the imperfect way the registers are kept, as the untrained midwives do not know the meaning of the terms—"presentation," "first stage of labour," &c. Other Medical Officers of Health comment on this. The Medical Officer of Health for Northwich finds midwives anxious and willing to comply with requirements, but as many can neither read nor write it is difficult to get them to obey rules. At Sale the Medical Officer of Health finds untrained midwives lax in the use of antiseptics. The Medical Officer of Health for Wallasey finds he has had to instruct many midwives in the way to keep their registers. In Macclesfield Rural District the midwives are for the most part uneducated. Only two have had any training. However, the Medical Officer thinks that in this ignorance there is often safety, as in the case of danger they do not delay sending for medical help. He thinks it is absurd to insist on an untrained woman having a thermometer which she cannot use. In Nantwich Rural District the Medical Officer of Health has carefully gone over the portion of the Rules giving directions to midwives, with every midwife in the district, and done his best to get them to understand the regulations. In particular he has always insisted on the importance of scrupulous cleanliness.

Erysipelas is notified, but not as thoroughly as most notifiable diseases. Certainly, cases which it would be difficult to maintain were true erysipelas are occasionally reported as erysipelas. However, as the disease is a specific infectious

one, characterised by spreading inflammation of the skin, due to the presence of a micro-organism, and especially liable to attack debilitated persons, puerperal patients, and those suffering from wounds, it is expedient and necessary that it should be notified. Provided all the actual cases of the disease are reported, it is of little moment if an occasional case of simple inflammation of the skin is notified in error. Erysipelas is undoubtedly associated with insanitary conditions, and this fact is mentioned in two or three Reports. Cases notified should therefore be investigated as carefully as cases of diphtheria ordinarily are; premises where the disease arises should be examined, defects remedied and disinfection undertaken. At present in many districts very little is done to combat erysipelas or prevent its spread, and in some districts nothing is done.

During 1905 there were 151 cases notified, and 5 deaths in the Municipal Boroughs, there were 227 cases notified and 14 deaths in the other Urban Districts, and there were 94 cases notified and 2 deaths in the Rural Districts. Of these 472 cases only 11 were removed to Hospital. In 1904, the number of cases notified was 492, and the number of deaths was 26. In 1903, the number of cases notified was 363, and the number of deaths was 26. In 1902 the number of cases notified was 383, and the number of deaths was 14. In 1901 the number of cases notified was 376, and the number of deaths was 23. In 1900 the number of cases notified was 393, and the number of deaths was 14. In 1899 the number of cases notified was 435, and the number of deaths was 10. In 1898 the number of cases notified was 348, and the number of deaths was 15. In 1897 the number of cases notified was 383, and the number of deaths was 22. In 1896 the number of cases notified was 355, and the number of deaths was 18. In 1895 the number of cases notified was 309, and the number of deaths was 20. In 1894 the number of cases notified was 397, and the number of deaths was 23. In 1893 the number of cases notified was 538, and the number of deaths was 27. In 1892 the number of cases notified was 247, and the number of deaths was 36. Thus the number of cases notified in 1905 was 104 above the average in 1892-1904, and the number of deaths in 1905 was just equal to the average in 1892-1904.

Other Septic Diseases.—This is a term which appeared for the first time in the new forms issued for 1900 by the Local Government Board; there being no term corresponding to it previously in use. During 1905 the deaths of 28 persons came under this heading. During 1904 there were 26 deaths under this heading during 1903 there were 39 deaths under this heading, during 1902 there were 37 deaths under this heading.

During 1901 there were 30 deaths, and during 1900 there were 31 deaths under this heading.

Phthisis.—In the Municipal Boroughs, Phthisis was certified as the cause of 152 deaths, in the other Urban Districts it was certified as the cause of 208 deaths, and in the Rural Districts it was certified as the cause of 120 deaths. There were thus 480 deaths from this cause in Cheshire during 1905. In the Municipal Boroughs the death-rate was 0.88 per 1,000 living, in the other Urban Districts the death-rate was 0.73 per 1,000 living, and in the Rural Districts the death-fate was 0.70 per 1,000 living. The phthisis death-rate for Cheshire in 1905 was 0.76. This death-rate for the whole County in 1904 was 0.89, it was 0.86 in 1903, it was 0.97 in 1902, it was 1.02 in 1901, it was 0.95 in 1900, it was 1.06 in 1899, it was 1.14 in 1898, it was 1.09 in 1897, it was 1.14 in 1896, it was 1.22 in 1895, it was 1.12 in 1894, it was 1.25 in 1893, and it was 1.31 in 1892. The phthisis death-rate for the County in 1905 was therefore 0.31 below the average in the years 1892-1904. However, quite high phthisis death-rates were recorded in 1905, from Higher Bebington (3.77), the Borough of Hyde (1.29), and Hoylake and West Kirby (1.18).

In many Districts handbills, giving general rules to be observed with reference to sufferers from this disease, have been issued and are distributed as occasion requires. The bills are drafted on the lines of the "Memorandum on Precautions against the Infection of Phthisis or Consumption," issued by direction of the County Council in February, 1894. These handbills are all calculated to impress upon those who receive them that phthisis is a distinctly infectious disease, and that active measures should be taken to prevent its spread. The Medical Officer of Health for Crewe notes that disinfection of houses, bedding, etc., is carried out in all fatal cases of phthisis or tuberculosis, free of charge. The Corporation also enable Medical Practitioners to obtain bacteriological examination of specimens of sputum from suspected cases of pnthisis. It is also mentioned that the following Bye-law came into force in the Borough of Crewe towards the close of 1902: "No person shall spit on the floor, side, or wall of any public carriage, or of any public hall, public waiting room, or place of public entertainment, whether admission thereto be obtained upon payment or not, within the Borough. Any person offending against this bye-law shall be liable to a fine not exceeding £5." Copies of this bye-law are posted up in public places, and doubtless will be effective in diminishing a source of danger.

The Medical Officer of Health for the Borough of Hyde has induced his Authority to adopt a scheme for the voluntary

notification of phthisis. After a notification is received, the Inspector visits the house, and leaves there a printed leaflet of instructions.

In the Borough of Macclesfield houses infected owing to phthisis are disinfected without any charge being made. The Authority in this Borough has issued a printed placard warning people not to spit on the walls or floors, which has been hung up in the common lodging-houses. It is hoped that publicans will hang these placards in their bar-parlours, and that manufacturers will see their way to having the placards hung in their mills, workshops, &c.

The Medical Officer of Health for the Urban Districts of Knutsford, Middlewich, and Winsford, and the Rural District of Bucklow, reports that by direction of these Authorities he sent out a circular in May, 1901, to medical men practising wholly or partially in these Districts, offering a half-crown fee for each voluntary notification of a case of phthisis, but very few notifications were received. However, in these Districts, disinfection where cases of phthisis exist, and especially after death therefrom, is offered. Accordingly, in several instances in these Districts, disinfection has followed a fatal case of phthisis or tuberculosis. The Ashton-upon-Mersey District Council also disinfect premises in which death from phthisis has occurred, and so do the Bredbury and Romiley District Council.

In January, 1902, the District Council of Hoylake and West Kirby resolved to carry out the disinfection of premises infected from all cases of phthisis. Accordingly, circulars were sent to all practitioners in the District, intimating that this work would be done free of cost, on request. Seven houses were disinfected in 1902, six houses were disinfected in 1903, five houses were disinfected in 1904, and five houses were disinfected in 1905, after deaths from phthisis.

The Provision of Sanatoria for Consumptive Patients.—Early in the year 1902 a communication was received from the Clerk to the Guardians of the Wirral Poor Law Union, intimating that the Workhouse Committee had under consideration the desirability of separating consumptive patients from other sick inmates in their Infirmary, but that they had no convenient wards on the Workhouse premises available for the purpose. There seemed no prospect of obtaining any accommodation at the Liverpool Sanatorium, Delamere Forest, or at the Sanatorium being erected at Heswall, so a circular letter was sent to all the Unions in the County, inviting them to send delegates to a Conference, to

consider if it might not be practicable to unite, with the view of providing a Sanatorium for pauper cases in the County. This Conference was held, being attended by representatives from most of the large Unions in the County, and the following Resolution was passed unanimously:—

"That this Conference requests the County Council to consider the advisability of providing Sanatoria for the treatment of Consumptive cases."

In response to this communication, the Sanitary Authorities and Boards of Guardians in the County were invited to send delegates to a Conference, which was in due course held at Crewe, on July 10th, 1902. This Conference was well attended, and after a full discussion on the subject of the provision of a Sanatorium or Sanatoria for the County, for the treatment of consumptives, the following Resolution was passed:—

"That in the opinion of this Conference—but without in any way committing the several Authorities represented—it is desirable that a Sanatorium or Sanatoria should be established in the County for the treatment of Consumption, and that the County Council should take the necessary steps, under the Isolation Hospital Acts, with a view to an order being made including all the Sanitary Districts in the County a Hospital District, for the establishment of such Sanatorium or Sanatoria, and at the same time obtain the consent of the Local Government Board to include 'Phthisis' as an infectious disease within the meaning of the Infectious Disease (Notification) Act."

A copy of this Resolution was sent to the Sanitary Authorities and Boards of Guardians in the County, with a request for an expression of opinion thereon. A large number of replies were before the Public Health Committee, on October 31st, 1902, when (as other replies had yet to come in) their consideration was adjourned.

During 1903 replies came in slowly. At a meeting of the Public Health Committee on October 23rd, 1903, a statement was made showing the results of enquiries; and the consideration of the matter was again adjourned till further replies had been received.

At a meeting of the Isolation Hospitals Acts Sub-Committee, held at Crewe, on October 6th, 1904, the above Resolution was further considered, and the Clerk reported that the Local Government Board had approved the Order made by the Council at its Meeting on February 12th, 1903, ordering

that "Pulmonary Tuberculosis" should be considered an infectious disease, for the purposes of the Isolation Hospitals Acts, 1893 and 1901.

The Clerk also reported that of the Sanitary Authorities, 2 Boroughs, 22 other Urban Districts, and 7 Rural Districts approved of the above Resolution passed at the Conference; 2 Boroughs, 4 other Urban Districts, and 4 Rural Districts objected to the same Resolution; and 2 Boroughs, 9 other Urban Districts, and 2 Rural Districts were neutral, or had not definitely replied. The summary was as follows:—

	Sanitary Authorities.	Population, Census, 1901.	Assessable Value. £
Approve ...	31	... 276,142	... 1,544,839
Object ...	10	... 130,984	... 652,919
Neutral, or no reply ...	13	... 184,479	... 1,106,119
Total Assessable value of County ...			£3,303,877

As to the Boards of Guardians, the following were their observations on the Resolution passed at the conference:—

Ashton-under-Lyne ...	... Approve.
Birkenhead ...	... Approve.
Bucklow ...	... Approve.
Chester ...	... In sympathy with all efforts made by the Council to mitigate the scourge of Consumption, but cannot see its way to support the resolution.
Congleton ...	... Object.
Hayfield ...	... Decided to do nothing.
Macclesfield ...	... Decided to wait particulars before committing themselves.
Nantwich ...	... Unable to express any opinion until they receive more definite information.
Northwich ...	... Will give favourable consideration to Resolution, but require further information.
Runcorn ...	... Consider some provision should be made for the establishment of a Sanatorium as an experiment.

Stockport ...	... Approve.
Tarvin ...	... Object.
Whitchurch ..	... Approve, provided that financial arrangements satisfactory to the Board are made.
Wirral ...	... Approve, but submit to the Council the necessity of providing in such Institution for cases looked upon as incurable and urge the Council to take the earliest opportunity of dealing with this important subject.

After the whole question had been discussed at some length, it was

Resolved—That the County Medical Officer of Health report as to what, in his opinion, is the most suitable form of Sanatorium for Cheshire, if the Council should hereafter determine to provide a Sanatorium or Sanatoria for the County, or any part thereof, together with an estimate of the cost thereof, and also to report the results which experience has shown to ensue from the treatment of pulmonary tuberculosis in Sanatoria in this and other Counties, and generally on the subject.

At a Meeting of the Pubilc Health Committee, held at Crewe on October 21st, the portion of the Sub-Committee's Report referred to was adopted, and at the Quarterly Meeting of the Council, held at Chester Castle on November 10th, the same was adopted.

In due course the County Medical Officer submitted a Report as directed. This Report was dated December 15th, 1904. The conclusions arrived at are thus stated:—

After carefully considering the whole subject referred to him, the County Medical Officer has come to the following conclusions:—

(1) That, considering there are at present in Cheshire three Sanatoria for Consumptives, and another Sanatorium (much larger than the others) is nearly completed, and that there is no probability of any of these being ordinarily available for Cheshire patients, it is expedient that a Sanatorium should be provided for the County.

(2) That an excellent form of Sanatorium (similar to that which has been adopted at Holt, Nor-

folk), in which patients are practically day and night in the open air, may be provided at a very moderate cost.

(3) That a Sanatorium on these lines, to accommodate 22 patients, may be provided at a cost of £3,600, and that this could be extended to give accommodation to 44 patients, at an additional expenditure of £1,107.

(4) That the open air treatment of Consumptives has the almost universal support of the medical profession, and that it offers the best prospect of curing the patient, apart altogether from its value in preventing the spread of the disease.

(5) That the results which experience has shown to ensue from the open air treatment of pulmonary tuberculosis in this country and elsewhere, are exceedingly satisfactory.

(6) That no sound objections have hitherto been advanced against the open air treatment of Consumptives.

(7) That Sanatoria for Consumptives do not appear to be a source of danger to the surrounding neighbourhood.

The Report was considered at a meeting of the Isolation Hospitals Act Sub-Committee, on June 22nd, 1905, and the following Resolution was passed:—

Resolved—That such Report be received, and the conclusions set out at the foot thereof approved, and that after a paragraph has been inserted therein to the effect that in all probability the Local Government Board will sanction the borrowing of at any rate of the portion of the cost of providing the class of Sanatorium indicated therein, representing the purchase of the land as a site thereof, and the erection of the buildings of a permanent character, such as the Administrative Block, a print of such Report be sent to each of the Municipal Boroughs, and Urban and Rural District Councils in the Administrative County, with a request that they will furnish the Sub-Committee with their observations upon the conclusions of the County Medical Officer of Health, and that in forwarding such print the Clerk to the Council intimate to the Council of each such Borough and

District that this Sub-Committee are of opinion that the scheme of sanatorium provision for the County suggested therein is necessary, and strongly recommends such Councils to approve the same.

At a Meeting of the Public Health Committee, held on July 14th, 1905, the above Resolution was referred back to the Sub-Committee for further consideration, and the County Medical Officer of Health was instructed to ascertain from the Committee of Management of the Sanatorium recently erected at Delamere by Mr. W. J. Crossley, whether they are prepared to receive into the Sanatorium patients from the Sanitary areas within the Administrative County of Chester, and, if so, at what cost; and such information when received was to be furnished by the County Medical Officer of Health to all the Sanitary Authorities in the Administrative County.

At a Meeting of the Isolation Hospitals Acts Sub-Committee, held on December 7th, 1905, the Clerk to the Council laid before the Sub-Committee the following extract from the Minutes of the Meeting of the Public Health Committee, held on October 27th, 1905.

The County Medical Officer of Health laid before the Committee a letter from the Secretary of the Manchester Hospital for Consumption and Diseases of the Throat and Chest, to the effect that the Committee are prepared to receive suitable cases at the Crossley Sanatorium from the Sanitary Areas within the Administrative County of Chester, at a weekly charge of 32/-; that they could not reserve beds for such cases, but would admit cases subject to there being beds available, and subject to the usual Regulations. By "suitable cases" are meant early cases of "phthisis." Mr. W. J. Crossley also informed the Committee that all the available accommodation in the Sanatorium bearing his name was practically taken up. The following Resolutions were passed :—

Resolved—That having regard to Mr. Crossley's statement, the Isolation Hospitals Sub-Committee be requested to further consider the question of the provision of a "Sanatorium or Sanatoria" for the County.

Resolved—That a copy of the Report of the County Medical Officer of Health be sent to each of the Municipal Boroughs and Urban and Rural District Councils in the Administrative County, with a request that they will furnish the Sub-Committee with their observations upon the conclusions of the County Medical Officer of Health as appearing in such Report, and in forwarding the same the Clerk to the Council shall intimate to the Council of each such Borough and

District that the Sub-Committee is of opinion that some such scheme as the one indicated in the Report is necessary.

Other Tubercular Diseases is a heading which appeared in the new forms which were issued by the Local Government Board for the mortality returns of 1900, 1901, 1902, 1903, 1904, and 1905. There was nothing corresponding to it previously in use. During 1905 the deaths of 297 persons were ascribed to other tubercular diseases, viz. :—118 in the Municipal Boroughs, 123 in the other Urban Districts, and 56 in the Rural Districts.

Of the 297 who died 100 were infants in their first year, 84 were children a year old and under 5 years, 38 were between 5 years and 15 years, 19 were between 15 and 25 years, 50 were between 25 and 65 years, and 6 were 65 years and upwards.

The death-rate in the County from phthisis being 0.76, and the death-rate from other tubercular disease being 0.47, the whole tubercular disease death-rate, per 1000 living, was 1.23 in 1905. In 1904 the death-rate from tubercular diseases other than phthisis was 0.56, and the death-rate from all tubercular diseases was 1.45. In 1903 the death-rate from tubercular diseases other than phthisis was 0.42, and the death-rate from all tubercular diseases was 1.39. In 1902 the death-rate from tubercular diseases other than phthisis was 0.42, and the death-rate from all tubercular diseases was 1.39. In 1901 the death-rate from tubercular diseases other than phthisis was 0.52, and the death-rate from all tubercular diseases was 1.54. In 1900 the death-rate from tubercular diseases other than phthisis was 0.52, and the death-rate from all tubercular diseases was 1.47.

Tuberculosis in Cattle.—The cities of Liverpool and Manchester, and other towns a little to the north of Cheshire, have now the right to send Veterinary Surgeons to inspect cattle belonging to dairy farms supplying the said cities and towns with milk. As a consequence, letters are received, from time to time, intimating to the County Authority that cows with tuberculous udders have been found on certain farms, and steps are taken to see that the infected cows are removed from dairy stock and "dried off," and that they are not sold or slaughtered without previous notice. Indeed, all practicable steps are taken to see that tuberculous meat or milk is not sold or offered for sale in the County.

Cancer.—The term "Cancer, malignant disease," appears in the new forms issued by the Local Government Board for use in 1900, 1901, 1902, 1903, 1904 and 1905. There was no term

corresponding to this in previous use. During 1905 the deaths of 488 persons came under this heading, viz. :—162 in the Municipal Boroughs, 200 in the other Urban Districts, and 126 in the Rural Districts. The Cancer death-rate in 1905 was therefore 0·77 per 1,000 living. In the Municipal Boroughs this death-rate was 0·93, in the other Urban Districts it was 0·70, and in the Rural Districts it was 0·74. It is interesting to note that only six of the deaths from cancer were of persons under 25 years of age, 297 were of persons between 25 years and 65 years, and 185 were of persons 65 years old and upwards.

In the Borough of Congleton, the cancer death-rate has been exceptionally high for years. In 1905, this death-rate was 1.21, in 1904 it was 1.3, in 1903 it was 1.21, in 1902 it was 1.49, in 1901 it was 1.48, and in 1900 it was 1.39. In the Borough of Macclesfield the cancer death-rate was 1.52 in 1905, 1.07 in 1904, and 1·04 in 1903. At Marple the cancer death-rate was 1.23 in 1905. It was exceptionally high in 1905 at Lymm (1.63) and at Nantwich Urban District (1.65).

Any contribution to the better understanding of so terrible a disease should be welcomed, and most Medical Officers of Health could contribute some facts and observations. There are many points as regards cancer which require elucidating. Among the questions pressing to be answered are the following :—Is cancer a parasitic disease? Is it infective? Does it haunt houses and places? Is it communicated by domestic animals? Is it associated with the ingestion of any food, animal or vegetable? Is the disease increasing?

Bronchitis, Pneumonia, &c.—In the old mortality-forms, made use of by Medical Officers of Health, there used to be a column headed "Bronchitis, Pneumonia, and Pleurisy." In the new forms issued by the Local Government Board, deaths from bronchitis, pneumonia, pleurisy, and other diseases of the respiratory organs, have to be entered in four separate places. Grouping them together, it appears that in 1905 there were 1,427 deaths due to these diseases, viz., 499 in the Municipal Boroughs, 595 in the other Urban Districts, and 333 in the Rural Districts. The death-rate for the whole county was 2.26 per 1000 living. In the Municipal Boroughs this death-rate was 2.87, in the other Urban Districts it was 2.08, and in the Rural Districts it was 1.96. This shows that the mortality was relatively higher in the Municipal Boroughs than in the other Urban Districts, and relatively higher in the towns than in the Rural Districts. During 1904 this death-rate was 2.52 in the County, being 3.12 in the Municipal Boroughs, 2.49 in the other Urban Districts, and 1.95 in the Rural Districts. During 1903 this death-rate was 2.22 for

the County, being 2.81 in the Municipal Boroughs, 2.13 in the other Urban Districts, and 1.75 in the Rural Districts. During 1902 this death-rate was 2 58 for the County, being 3.14 in the Municipal Boroughs, 2.53 in the other Urban Districts, and 2.08 in the Rural Districts. During 1901 this death-rate was 2.54 for the County, being 3.57 in the Municipal Boroughs, 2.30 in the other Urban Districts, and 1.91 in the Rural Districts. During 1900 this death-rate was 2.74 for the County, being 3.16 in the Municipal Boroughs, 2.77 in the other Urban Districts, and 2.33 in the Rural Districts. The figures for 1900 and more recent years, as they include deaths from "other diseases of the respiratory organs," are not quite comparable with those of previous years.

Alcoholism.—The term "Alcoholism, Cirrhosis of Liver" appears in the new forms issued by the Local Government Board, for use in 1900, 1901, 1902, 1903, 1904, and 1905, and there was nothing corresponding to it in previous years. During 1905 the deaths of 104 persons came under this heading, viz. :—23 in the Municipal Boroughs, 47 in the other Urban Districts, and 34 in the Rural Districts. Thus the alcoholism death-rate in the County in 1905 was 0.16 per 1000 living. In 1904 this death-rate was 0.17, in 1903 this death-rate was 0.18, in 1902 this death-rate was 0.22, in 1901 this death-rate was 0.18. This is certainly a bad record, the deaths of well over 100 persons in the County being ascribed to alcoholism every year. Unfortunately, alcoholism is so largely concerned in causing disease and premature death, directly or indirectly, that the number of times in which it is certified THE cause of death is of little significance.

Alcoholism, as a cause of death, is, however, far less important than as a cause of ill-health, incapacity for employment and degeneracy. In the Report of the Inter-Departmental Committee on Physical Deterioration, dated July 20th, 1904, the causes of degeneracy are set forth, and among these alcoholism is given a foremost place.

> "Next to the urbanisation of the people," says the Report, "and intimately associated with it as the outcome of many of the conditions it creates, the question of drink occupies a prominent place among the causes of degeneration. The close connection between a craving for drink and bad housing, bad feeding, a polluted and depressing atmosphere, long hours of work in overheated and often ill-ventilated rooms, only relieved by the excitement of town life, is too self-evident to need demonstration, nor unfortunately is the extent of the evil more open to dispute."

This Report goes on to say that not only is poverty the result of drink, but it becomes an active agent in promoting it.

People turn to drink to blunt their sensibility to squalor, and it re-acts in deadening all desire for improvement. As to whether drunkenness is on the increase it is not thus easy to speak. Still in one respect there is an admitted increase. The tendency of the evidence given to the Committee was to show that drinking habits among the women of the working classes are certainly growing with consequences exceedingly prejudicial to the care of the offspring, not to speak of the possibility of being born permanently disabled.

In conclusion, the Committee believe that their labours will result in giving matter for reflection to those who realise the importance of evidence towards the determination of issues of such uncertainty and complexity, and that these persons will await the necessary steps being taken to secure that well-sifted and accurate information, without which it is impossible to arrive at any conclusion of value to the general problem.

Premature Birth is another term which appears in the new forms issued by the Local Government Board for use in 1900, 1901, 1902, 1903, 1904, and 1905. During 1905 the deaths of 294 infants were ascribed to premature birth, 0.47 per 1,000 living. During 1904 the deaths of 323 infants were ascribed to premature birth. During 1903 the deaths of 293 infants were ascribed to premature birth. During 1902 the deaths of 300 infants were ascribed to premature birth. During 1901 the deaths of 306 infants were ascribed to premature birth, and during 1900 the deaths of 273 infants were ascribed to premature birth.

Diseases and Accidents of Parturition.—This is another term which appears in the new forms issued for use in 1900, 1901, 1902, 1903, 1904, and 1905. During 1905 the deaths of 57 persons came under this heading. As the number of births during the year was 15,535 in 1905, it would appear that 3.67 in each 1,000 child-births were fatal to the mothers in addition to those from puerperal fever. Calculated in the same way 3.42 in each 1,000 child-births in 1904 were fatal to the mothers, 3.74 in each 1,000 child-births in 1903 were fatal to the mothers, 4.22 in each 1,000 child-births in 1902 were fatal to the mothers, 4.31 in each 1,000 child-births in 1901 were fatal to the mothers, and 3.73 in each 1,000 child-births in 1900 were fatal to the mothers. Doubtless the proportion is actually larger than this.

Heart Diseases.—In the Municipal Boroughs 262 deaths were due to heart diseases (equal to a death-rate of 1.50), and in the other Urban Districts 361 deaths were due to heart diseases (equal to a death-rate of 1.26). In the Rural Districts 240 deaths were due to heart diseases (equal to a death-rate of 1.41). The

death-rate from heart diseases in the whole county was 1.37 in 1905. This death-rate was 1.53 in 1904, it was 1.34 in 1903, 1.37 in 1902, 1.44 in 1901, 1.45 in 1900, 1.36 in 1899, 1.37 in 1898, 1.41 in 1897, 1.39 in 1896, 1.45 in 1895, 1.32 in 1894, 1.37 in 1893, and 1.50 in 1892.

Accidents.—This is yet another term which appears in the new forms issued by the Local Government Board for use in 1900, 1901, 1902, 1903, 1904, and 1905. During 1905 the deaths of 247 persons came under this heading. Thus the death-rate from accidents was equal to 0.39 per 1,000 living in 1905. In 1904 there were 258 deaths ascribed to accidents (0.42 per 1,000 living), in 1903 there were 214 deaths ascribed to accidents (0.35 per 1,000 living), in 1902 there were 283 deaths ascribed to accidents (0.47 per 1,000 living), in 1901 there were 273 deaths ascribed to accidents (0.45 per 1.000 living), and in 1900 there were 270 deaths ascribed to accidents (0.43 per 1,000 living).

Suicides.—This term also appears in the new forms issued by the Local Government Board, for use in 1900, 1901, 1902, 1903, 1904, and 1905. During 1905 the deaths of 69 persons came under this heading—0.11 per 1,000 living. During 1904 the deaths of 85 persons came under this heading —0.14 per 1,000 living. During 1903 the deaths of 58 persons came under this heading, that is 0.09 per 1,000 living. During 1902 the deaths of 73 persons came under this heading —that is 0.12 per 1,000 living. During 1901 the deaths of 54 persons came under this heading—that is 0.09 per 1,000 living. During 1900 the deaths of 62 persons came under this heading—that is 0.10 per 1,000 living.

Unsatisfactory Certificates of Deaths.—Many Medical Officers of Health find difficulty in classifying the causes of death in the Registrar's returns, owing to the number of causes certified in some instances. Many examples of this might be given, but two will suffice; a death of a child which took place in Runcorn Rural District was certified as due to measles, scarlatina, diphtheria, and pneumonia; and a death of an adult which took place in Bucklow Rural District was certified as due to Bright's disease, influenza, pneumonia, and heart failure. Occasionally, also, the cause of death assigned is too vague, e.g., "tumour," "coma," "apnœa."

Rabies.—There was no outbreak of canine rabies during 1905. This exemption was, no doubt, in part due to the activity of the Police, who during the year seized 2,232 stray dogs, of which 1,981 were killed.

Anthrax.—In the first quarter of 1905, there were 20 outbreaks of this disease. Seventeen cows, 2 sheep, 2 pigs, and 1 ass were attacked. All these animals died with the exception of 1 cow, which was killed by order of the owner. In the second quarter there were 11 outbreaks of this disease. Seven cows, 5 sheep, and 1 horse were attacked and died. In the third quarter there were 19 outbreaks of this disease. Fourteen cattle, 4 pigs, and 1 horse were attacked and died. In the last quarter there were 22 outbreaks of this disease. Nineteen cattle, 1 sheep, and 2 pigs were attacked and died.

The infected carcases were in every instance promptly cremated, and the premises cleansed and disinfected as far as possible, under the direction of the police.

With reference to outbreaks of Anthrax in the County generally, there appears to be one source by which the disease can be easily spread, and that is by selling carcases to people in the County who have private slaughter-houses on their premises, of which there are many in Cheshire. The Chief Constable suggests for the consideration of his Committee that steps should be taken to obtain legislation that no private slaughter-house of any kind be permitted, except authorised by law, and under restrictions.

Glanders and Farcy.—There was only one outbreak of this disease in 1905. It occurred in the last quarter of the year. One horse was attacked, and killed by order of the Local Authority. Compensation to the amount of £5 was granted to the owner.

The Infectious Diseases (Notification) Act, 1889.—This Act came into force in London as soon as it became law. As regards the rest of the country, it was an "adoptive" Act, by vote of the Local Authorities, after public notice had been given. The obligation to notify each case of infectious disease rests on the householder and Medical Practitioner in attendance. Generally, only the Practitioner notifies, but the fact of the householder being also responsible prevents him from evading notification, by not calling in a doctor. The infectious diseases to which the Act applies are small-pox, cholera, diphtheria, membranous croup, erysipelas, the disease known as scarlatina, or scarlet fever, and the fevers known by any of the following names:—Typhus, typhoid, enteric, relapsing, continued, or puerperal.* Also the Local Authority may, by resolution, order any infectious disease, either temporarily or permanently, to be added to this list; but such order has no validity until approved by the Local Government Board.

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* Plague has lately been added to this list.

Measles was added to the list of notifiable diseases by the Alderley Edge Urban District Council in 1893.

In October, 1897, the Urban District Council of Ashton-upon-Mersey, by resolution, ordered that measles, German measles, and whooping-cough, be added to the list of notifiable diseases for that District. This order has been in force since November 6th, 1897. Towards the close of 1899 Lymm Urban District Council decided to make measles and German measles notifiable.

Wilmslow Urban District Council has since ordered that measles should be added to the list of notifiable diseases for that District.

Chicken-pox was made notifiable in Lymm early in 1902, and remains notifiable.

In February, 1903, the Town Council of Hyde, by resolution, ordered that chicken-pox be added to the list of notifiable diseases for that Borough.

Chicken-pox has been notifiable in Runcorn Rural District since 1902.

The Infectious Disease (Notification) Extension Act.—This short Act extends to the whole of England and Wales, as from January 1st, 1900, and without previous adoption by those Local Authorities that have not already adopted compulsory notification, the provisions of the Infectious Disease (Notification) Act, 1889. Prior to the passing of this Act it was found that, either by the adoption of the Act of 1889, or under separate Local Acts, the notification of infectious diseases was compulsory in districts having an aggregate population of upwards of 28,000,000 out of 30,000,000 inhabitants in England and Wales, and that the system had been of the greatest assistance to Sanitary authorities and their Officers in dealing with outbreaks of infectious disease. In those towns where notification is compulsory under Local Acts, the provisions of these Local Acts (with the single exception of that at Huddersfield) will be superseded by those of the general Act of 1889.

Isolation Hospitals.—The hospital accommodation in the Administrative County for isolation and treatment of infectious diseases is as follows :—

Altrincham Urban District—Lloyd's Fever Hospital, and a temporary Hospital for small-pox.

Bucklow Rural District and Alderley Edge, Ashton-upon-Mersey, Hale, Knutsford, Sale and Wilmslow Urban Districts—35 beds in the Withington Hospital at Baguley, and a temporary Hospital for small-pox.

Congleton Rural District, Congleton Municipal Borough, and Alsager, Buglawton, and Sandbach Urban Districts—A temporary Hospital for small-pox at Arclid.

Crewe Municipal Borough—Crewe Isolation Hospital, to which a pavilion for diphtheria has lately been added, and a small farm house and corrugated iron building for small-pox cases.

Hyde Municipal Borough—Hyde Isolation Hospital, completed in 1905, and a temporary Hospital for small-pox.

Hollingworth and Mottram Urban Districts and Tintwistle Rural District—A temporary Hospital for small-pox.

Lymm Urban District—A new Hospital, erected in 1904.

Macclesfield Municipal Borough—A temporary Hospital and another for small-pox. Two cottages were purchased in 1904 for isolating small-pox "contacts" and "suspects."

Macclesfield Rural District—A temporary Hospital for small-pox.

Nantwich Rural District and Nantwich Urban District—A temporary Hospital for small-pox. A permanent Isolation Hospital for cases other than small-pox was completed about the close of 1905, but has not yet been opened.

Northwich Rural District and Northwich, Winsford, and Middlewich Urban Districts—A New Hospital was completed in 1905. Northwich Rural and Urban Districts have provided temporary Hospitals, and Winsford Urban District has provided a small temporary Hospital.

Runcorn Rural District—A New Isolation Hospital was completed in 1905. There is also a Hospital for small-pox.

Runcorn Urban District—Runcorn Isolation Hospital.

Wallasey Urban District—Wallasey Isolation Hospital, lately enlarged, and temporary Hospital for small-pox.

Wirral Rural District and Higher Bebington, Lower Bebington, Bromborough, Ellesmere Port and Whitby, Neston and Parkgate, Hoylake and West Kirby Urban Districts—Spital Isolation Hospital, to which a new pavilion has lately been added, and a hospital at Greasby used for small-pox.

Some few Districts have also made arrangements to have infectious cases admitted to the Isolation Hospital at Baguley or elsewhere.

The districts which provided new permanent Hospitals in 1905, as just mentioned, were (1) the Borough of Hyde, (2) Northwich Rural and Northwich, Winsford and Middlewich Urban Joint Hospital District, (3) Nantwich Urban and Rural Joint Hospital Board, and (4) Runcorn Rural District.

The Borough of Congleton is still entirely without any accommodation for infectious patients other than small-pox; the Corporation are endeavouring to make provision jointly with neighbouring Authorities, but in their efforts to carry ut the scheme causes of delay have arisen . Some delay has been occasioned owing to one of the combining Authorities belonging to another County.

At Crewe, during 1905, there were admitted from the Borough into Hospital, 120 cases of scarlet fever, 27 cases of diphtheria, 9 cases of enteric fever, 3 cases of puerperal fever, and 1 case of whooping-cough. A case of suspected enteric fever was also admitted for observation. Three cases were admitted from outside Districts, viz. :—2 of scarlet fever and 1 of enteric fever In 1905 (as in 1904) 81 per cent. of the notified cases of scarlet fever were admitted to Hospital—a larger percentage than in any year before 1904. The accommodation arranged for by the Corporation of Dukinfield consists of only two beds for small-pox and two beds for cases other than small-pox, at the Hyde Hospitals, for which there is an annual sum paid. In addition there is a charge of £2 2s. per case for medical attendance in Hospital, and 1s. 3d. a day for food. Where more than four beds are occupied, the additional charge is at the rate of £3 3s. 0d. per case for medical attendance in Hospital. Further accommodation should be arranged for. At Hyde there were 190 cases belonging to the Borough isolated in Hospital, of which 179 were cases of scarlet fever, and 11 were cases of enteric fever. There were also 34 cases of small-pox, 19 cases of scarlet fever, and 6 cases of enteric fever, admitted to Hospital from neighbouring Districts. The new Hospital, which was commenced early in 1903, was not opened till June 7th, 1905. It provides accommodation for 32 scarlet fever cases, 10 enteric fever cases, and 10 diphtheria cases. It has also an observation block for 2 cases, the nature of which is uncertain. In Macclesfield Borough there were 6 cases of small-pox, 73 of scarlet fever, and 3 of diphtheria, admitted to Hospital from the Borough, and 3 from the Rural District. Thus there were in all 85 cases admitted during the year. During 1905, a main was laid to the small-pox Hospital, and a wash-house and boiler were erected, so that this Hospital now has an abundant

supply of cold and hot water, and ample facilities for washing. The Borough of Stalybridge has a small-pox Hospital situated at Hartshead, and managed by the Ashton-under-Lyne and District Joint Small-pox Hospital Board, on which Stalybridge is represented by two members. The 11 cases of small-pox notified in the Borough in 1905, were thus isolated, but only two other cases of infectious disease were isolated in 1905.

Alsager is without accommodation for the isolation of infectious disease other than small-pox, but during 1903 it joined the Rural District of Congleton, the Borough of Congleton, and the Urban Districts of Sandbach, Buglawton, and Biddulph, in applying to the Local Government Board to issue a Provisional Order forming these Districts into a Joint Hospital District. The Inquiry with reference to this application was held at Congleton Town Hall on January 22nd, 1904. Lloyd's Fever Hospital was, as usual, of use to Altrincham in 1905. Twenty cases of scarlet fever, 2 cases of enteric fever, and a case of diphtheria, were admitted during the year. This Hospital is not adapted for treating two diseases simultaneously. It has already been reported that the County Council consider this Hospital inadequate, and the scheme for its replacement by a new Hospital is under consideration. Architects have been instructed to prepare plans for a Hospital (to contain 30 beds) so arranged as to enable the Authority to deal simultaneously with two or three distinct diseases. One of the plans submitted has been selected, and a convenient site has been chosen. There is thus a reasonable probability that the new Hospital will shortly be commenced.

Bollington Urban District Council have no prospect of getting a Hospital for nothing, and will have to make such provision as seems practicable. They have come to an arrangement with the Corporation of Macclesfield under which, on payment of an annual fee of £30, they have the right to use two beds in the Macclesfield Small-pox Hospital. They are also charged for the maintenance of patients and for Medical Attendance on the patients. No provision has been made for the isolation in Hospital of cases other than small-pox. The District Medical Officer points out that such provision is needed, as he finds it almost impossible to isolate infectious cases at home. Bowdon Urban District Council, which used to make use of Lloyd's Fever Hospital, have arranged to send their infectious cases to the Sanatorium at Baguley, but no cases were sent from Bowdon in 1904 or 1905. Infectious cases which occur in Bredbury and Romiley may be sent to Hyde Hospital. Four beds are retained, and additional beds can be used when needed, provided there is room. The Urban District Council of Cheadle and Gatley have arranged for 3 beds to be reserved for the use of their District at

Baguley Sanatorium, and have joined Heaton Norris Urban District in building an Iron Hospital for small-pox (to contain 8 beds), on a site near the Cheadle Outfall Works. Compstall Urban District Council have arranged with the High Peak Hospital Committee to receive into their Hospital infectious cases which require isolation. No arrangement has been made for the isolation in hospital of any infectious case which may arise in Handforth. The Urban District of Hazel Grove and Bramhall isolate small-pox cases at Whitehill Hospital, Stockport, or Hyde Hospital. Other cases do not appear to be isolated. At Hollingworth, Mottram, and Tintwistle there is still no accommodation for cases other than small-pox. A re arrangement of the hospital provision is being considered.

Cases belonging to Hoole are treated, by arrangement, in Chester Isolation Hospital. At Marple all cases of infectious disease (including small-pox) which need isolating, are dealt with by the Hyde Corporation.

Some progress has been made towards providing Isolation Hospital accommodation for Nantwich. In the Annual Report for 1902 it was stated that a Joint Hospital Board has been constituted for the Nantwich Urban and Rural Districts, under Section 279 of the Public Health Act, 1875. It was suggested that a Hospital for 16 beds (about half the number proposed by the County Medical Officer) might be sufficient for a time provided the administrative portions of the Hospital were large enough to permit of the Hospital being extended by building another pavilion. It was also stated that a site had been approved by the Local Government Board and purchased. During 1903 plans for a Hospital were prepared and sent to the Local Government Board, together with an application of the Nantwich Joint Hospital Board, for sanction to borrow £6,800 for building the Hospital. The Official Inquiry was held on December 3rd, 1903, and the plans were approved, subject to a few slight alterations in matters of detail, and the provision of an Observation Block to contain not less than 4 beds. The Inspector said that, if the Joint Hospital Board agreed to provide an Observation Block, an application should be sent in forthwith for sanction to borrow an increased sum of money, and the matter could go forward without a second Inquiry.

This was done, and a loan for the whole amount required was in due course sanctioned. Shortly afterwards contracts for the erection of the Hospital were entered into, and building operations were in progress during 1904 and 1905. There does not, however, appear to be any prospect of the Hospital being opened till the latter half of 1906.

The Northwich, &c., Joint Hospital, in the Parish of Davenham has not taken so long to erect. The plans were prepared and approved in 1903, building operations were begun in 1904, and the Hospital was opened on October 1st, 1905. Lymm Isolation Hospital was only used for the Isolation of 7 diphtheria cases in 1905. A suitable ambulance for the removal of patients appears to be needed. The Runcorn Urban District Council's Hospital consists of an Administrative Block and one Pavilion. As originally planned there were to have been two Pavilions, but the second was not built. It is an old Hospital and rather out of date. It served for the isolation of 22 infectious cases in 1904.

At Wallasey there was again great pressure on the space available. The new pavilion, which was building in 1902, was opened on January 13th, 1903. It is one of the best and most completely equipped fever-pavilions in the County, and gives accommodation for 12 female patients and 12 male patients (with cots for children in addition) and 2 convalescent wards, while the kitchen, bath-room, sanitary appliances and heating arrangements are as satisfactory as they could be made. The additions to the Administrative Block, also completed in 1903, enable all the nurses to be accommodated there, and the house where some of them used to lodge has been given up. A new Discharging Block was also finished and opened in 1903, and forms a much needed addition to the Hospital. It may be mentioned, too, that the laundry has been enlarged and brought up to date, and that a porter's lodge has been built, and an ambulance-shed. Thus all the additions aud alterations at Mill Lane Hospital were completed in 1903. North Mead House, which was never a convenient auxiliary hospital, was given up in the latter part of 1903. The new pavilion proved of the greatest advantage in the treatment of scarlet fever during 1904, but as the year advanced the pressure on its space was great, and it was resolved to erect a fourth pavilion, which will also probably be used for scarlet fever; it was in course of erection during 1904 and 1905, and was formally opened on June 30th. This was deemed a suitable opportunity for ratepayers to see the accommodation provided for infectious cases. It happened that the number of patients in hospital was small, and there being no immediate demand for the new pavilion, a large number of visitors were shown over it on the opening day. The fourth pavilion contains 20 beds, exclusive of cots, and there is a day-room at each end for such patients as are able to be up. The four pavilions at Mill Lane Hospital provide in all 66 beds, and from 12 to 14 cots, as required. By August 29th, the number of cases of scarlet fever was so great that the new pavilion began to be used, and by November 21st, the hospital was so full that many convalescent children were transferred to North Mead House.

When cases need isolating at Yeardsley-cum-Whaley they are sent to Hyde Hospital, but there were none isolated in 1904 or 1905.

The Medical Officer for Bucklow Joint Hospital Board issued an Annual Report for 1903, 1904 and 1905. The 35 beds the Board are entitled to use at the new Baguley Hospital have been fairly well occupied since December 8th, 1902, when the Baguley Hospital was opened. Two patients were admitted in December, 1902, and were remaining in Hospital at the beginning of 1903. Altogether 124 cases were dealt with in 1903, the largest number of patients at one time being 32, the limit was never reached. During 1904 there were 116 cases admitted, viz. :—96 cases of scarlet fever, 16 cases of diphtheria, and 4 cases of enteric fever. There were 13 patients remaining in Hospital at the end of 1903, and 17 remaining in Hospital at the end of 1904. The largest number of patients at one time under treatment in 1904 was 30. During 1905 there were 95 cases admitted, viz. :—63 scarlet fever, 29 diphtheria, and 3 enteric fever. The largest number of patients in Hospital at one time in 1905 was 27. At the end of the year 11 patients were remaining under treatment. As regards accommodation for small-pox the position is as follows : in 1900 a partnership was arranged between Knutsford Urban District Council and Bucklow Rural District Council, and the Hospital, belonging to Knutsford, was removed from Tabley Hill to Mobberley, and placed under the management of a Joint Committee. It was re-erected on brick foundations, each of the three wards was provided with a fire-place and chimney, and a nurse's bedroom was added. At the end of 1902 this building was sold, as it stood, to the Joint Hospital Board, who then tried to find a site for it. The Withington Urban District Council had meanwhile bought a plot of land 14 acres in extent, at Newhall Green, Baguley, and proceeded to erect thereon a small-pox Hospital of corrugated iron, etc., for their own use. The Board obtained 7 acres of this land, as tenants of the Withington Council, and early in 1903 brought the Hospital from Mobberley and re-erected it at Newhall Green. The work was completed in February, 1903. Shortly afterwards another iron building to contain 3 bedrooms, and an iron pavilion (30 feet by 20 feet) were erected. This small-pox Hospital will accommodate 9 patients at one time (allowing the full amount of air space per patient) and the necessary staff. The whole number of patients treated in this Hospital during 1903 was 9, and the whole number treated in 1904 was 7. The Hospital was maintained in a state of preparedness to receive patients in 1905, but was not needed.

The Hospital, belonging to Northwich Urban District Council, at Wade Brook, has beds available for 5 patients. It was

in use till September 30th, 1905, 7 cases having been treated in the course of nine months. The Hospital erected by Northwich Rural District Council at Marbury, is available for patients suffering from small-pox from the Urban and Rural Districts. There were 12 cases of small-pox there at the beginning of the year 1905, and there were 26 cases admitted in 1905.

Macclesfield Rural District is served by the temporary Small-pox Hospital which was erected at Greenway, Sutton, in 1902. It was used in 1904 for the isolation of a case from Langley, but was not needed in 1905. During 1905 the Council of this Rural District made an arrangement with the Corporation of Macclesfield to have four beds reserved for the use of patients from the Rural District, viz:—2 for scarlet fever cases and 2 for enteric fever cases.

For Runcorn Rural District, as already mentioned, a new Isolation Hospital has been erected at Dutton. It was completed in November, 1905, and in the following month opened for the reception of patients. It is for infectious cases other than small-pox. This Hospital consists of an Administrative Block and Offices, a scarlet fever Pavilion to contain 12 beds, an enteric fever Pavilion to contain 8 beds, and an Observation Block to contain 4 beds. The site cost £1,050, and in addition to this the cost of the Hospital will be £9,850, but the Rural District Council asked to be allowed to defer building the scarlet fever pavilion for the present, and as this was estimated to cost £1,850, they only sought to borrow £8,000. The temporary Small-pox Hospital at Moore was in use for the isolation of one case in 1905.

Early in 1903, a Joint Hospital District was formed for Tarvin and Malpas Rural Districts, and Tarporley Urban District. There is nothing in the Reports from these Districts to indicate that the Joint Board have as yet put into operation the powers conferred upon them by the Order creating the District. At Tarvin, Chester Hospital is used to some extent, and Malpas Rural District have an arrangement for sending small-pox cases to the Hospital belonging to Whitchurch Union.

The Isolation Hospitals in the Administrative County, which do not belong to District Councils, Urban or Rural, are the Liverpool Port Hospital, the Bromborough Pool Hospital, the Macclesfield Guardians' Infectious Hospital, and the two Hospitals provided at the County Asylums at Upton and Parkside. The Port Hospital is for cholera or plague, and occasionally other cases occurring on shipboard. The Bromborough Pool Hospital belongs to Price's Patent Candle Company, and is solely for the use of employees at the Works. The Macclesfield Guardians' Hospital is for cases of infectious disease arising in the Workhouse; and the Asylums

Hospitals are, of course, exclusively for cases occurring among the inmates of the Asylums. Thus not one of these Hospitals is generally available.

The new Chester Isolation Hospital is used by the Hoole Urban District, and the Chester Rural District. Stockport Borough Hospital, which like the Chester Hospital is outside the Administrative County, is used to some extent by Hazel Grove and Bramhall Urban District. The Hospital at Ashton-under Lyne has been used by Stalybridge for small-pox cases. The Hospital at Biddulph has been used by the Borough of Congleton to isolate 7 cases of diphtheria. Monsall Hospital, near Manchester, is used for cases of infectious disease which may occur at the Barnes Convalescent Hospital.

How singularly inadequate the existing hospital accommodation is, to meet the requirements of an area having a population of 629,217, must be obvious. The provision made is even more inadequate than it looks on paper, not infrequently infectious cases have to be treated in Workhouses, and many who cannot be properly housed and isolated at home are not removed, but remain as possible sources of infection to members of their families and neighbours. Notification of infectious diseases should be of great service to an Authority, but if, when a case of infectious disease is notified—it may be the initial case in an epidemic—there are no means of isolating the patient, the Authority cannot do all that is practicable to prevent the spread of infectious disease. Of the 3,739 cases of infectious disease notified (which do not include notified cases of chicken-pox, measles, whooping-cough, etc.) in 1905, only 1283 (34 31 per cent.) were isolated in hospital. However, the proportion compares very favourably with that recorded in all years previous to 1903. The proportion of notified cases isolated in 1904 was 34.89 per cent. The proportion of notified cases isolated in 1903 was 42.07 per cent. The proportion of cases isolated in 1902 was 27.02 per cent. The proportion of notified cases in 1901 was 30.54 per cent. The proportion isolated in 1900 was 31.62 per cent. The proportion of notified cases isolated in the eight years 1892–99 was 16.12 per cent.

In many of the reports are references to the need of Isolation Hospital accommodation. In particular, some of the important Rural Districts are entirely without Isolation Hospital accommodation, except a few beds for small-pox, as in Congleton Rural District and Malpas Rural District.

It is thus apparent that some of the Isolation Hospitals, markedly those at Crewe and Wallasey, have done excellent work during the year, and there is abundant evidence, as there has been

in past years, that when a well-built permanent building is provided, and properly equipped, there is no unwillingness on the part of the public to make use of it.

The opprobrium of Isolation Hospitals is what takes place at small temporary hospitals. There is accommodation for one disease, and yet from time to time two diseases are treated simultaneously. The building is unbearably hot in summer, and cold and draughty in the winter; it is very noisy in stormy weather, and soon gets out of repair, while the risk of fire is imminent. Then, there is imperfect supervision, no proper nursing staff, no suitable disinfecting apparatus, and the washing arrangements are unsatisfactory.

The Isolation Hospitals Act, 1893.—This Act, which was passed on December 21st, gives most important powers to County Councils, and enables them to take an active part in obtaining the provision of efficient hospitals for isolating and treating cases of infectious disease. The Public Health Act, 1875, gave powers to Local Authorities, separately and jointly, to provide hospitals for infectious cases; but, as many Authorities neglected to use the powers conferred, or used them inadequately, and there was no ready way of moving these Authorities to make sufficient hospital provision, it seemed that further legislation was needed, and this is supplied by the Isolation Hospitals Act. The Clerk of the County Council in January, 1894, issued a summary of the principal provisions of the Act—the Council will be generally familiar with these. Without going into particulars, it may be well here to call attention to the Contents of Sections 2, 3, 4, 5, and 6, of the Act. Section 2 refers to limits. The Act does not extend to Scotland, Ireland, or London, or to any County Borough, or, except with consent, to any Borough; only in case of a Borough of under 10,000 population, the Local Government Board may direct that the Act shall apply. Section 3 empowers the Council of every County to provide, or cause to be provided, hospitals for the reception of infectious cases on application being made to them and proof adduced as mentioned in the Act, to the effect that necessity for such Hospital exists. Section 4 states that the application may be made by one or more Local Authorities, as defined by the Act, or by not less than 25 ratepayers in any contributory place. Section 5 directs that the application must be made by petition, and must state the district for which the hospital is required and the reasons for its establishment. The County Council are to consider the petition, and if satisfied that a "prima facie" case is made out, cause an inquiry to be made as to the necessity of the establishment of a hospital. By

Section 6, a County Council may direct their Medical Officer of Health to make an inquiry as to the necessity of an Isolation Hospital being established for the use of any particular district, and if he reports that such a hospital ought to be established, the Council may take the same proceedings for its establishment, as if a petition had been presented by a Local Authority.

All the steps taken by the Cheshire County Council from January, 1894, to the close of 1901, with the view of giving effect to this Act, are set forth in detail in the County Medical Officer's Annual Reports for 1896-1901.

The Isolation Hospitals Act, 1901.—This Act has for its object the amendment in various particulars, of the Isolation Hospitals Act, 1893. It enables Local Authorities (including Joint Boards) within the meaning of the Public Health Act, 1875, with the sanction of the Local Government Board, to transfer Hospitals erected by them to County Councils. It also enables County Councils to make contributions to Hospitals provided by Local Authorities (including Joint Boards) under the Public Health Act, 1875, and to borrow money for such purpose; and also to borrow in respect of contributions towards the erection of Hospitals, erected under the Isolation Hospitals Act, 1893. This Act contains many other amendments of the Isolation Hospitals Act, 1893, but the two mentioned were specially desired by the County Council; and, now that they are obtained, the County Council will be able (a) to contribute towards the structural expenses of new Isolation Hospitals to be erected, and (b) where Isolation Hospitals have been provided sufficient for the districts in which they are situated, to contribute an annual sum, towards the establishment expenses of such hospitals, or the repayment of the capital cost of such hospitals.

This Act enabled the County Council to offer assistance to all Sanitary Authorities and Joint Hospital Boards in the County, by contributing towards the cost of a site, or towards the erection of an Isolation Hospital, or towards the annual repayments made in respect of a loan (principal and interest) raised to provide an Isolation Hospital, or towards the cost of providing an Isolation Hospital, the debt on which had been paid off, or towards the cost of hospital accommodation arranged for by agreement. Such assistance was accordingly offered. The terms of the offer, and the response thereto, made by the several Sanitary Authorities and Joint Hospital Boards, are set forth in the Reports of the Meetings of the Isolation Hospitals Acts Sub-Committee, printed in the Minutes of Proceedings at the Quarterly Meetings of the County Council.

As regards the Isolation Hospital provided for Altrincham and Bowdon Urban Districts, and the Isolation Hospital provided for Runcorn Urban District, the County Medical Officer having reported that in his opinion, these hospitals were not adequate for the Districts for which they were provided, no contribution was made towards them.

The Infectious Disease (Prevention) Act, 1890.—This Act, except as regards London, where it has been in force since December, 1890, only comes into force after being formally adopted by the Local Authority. It gives increased control over the milk supply and increased powers of disinfection. It forbids the throwing of infectious rubbish into ashpits, etc. It forbids the retaining of an infectious human body longer than 48 hours elsewhere than in a public mortuary, or a room not used as a living, sleeping, or work-room; and the removal of the body of any person dying of infectious disease in hospital, except for being buried forthwith. It empowers a Justice to order an infectious patient in a hospital for Infectious Diseases to be detained therein, until free from infection, if it can be shown that he is without proper means of isolation and lodging elsewhere. It requires the Authority to provide free temporary shelter, with the necessary attendance, to the members of any families who have been compelled to leave their houses, to enable them to be disinfected by the Authority.

This Act has been adopted by a few of the Local Authorities in the County, but there is no reference in any of the Reports as to its being made use of.

In the Boroughs of Crewe and Stalybridge the Act has been in force since 1891.

The Report from Dukinfield states that this Act was adopted in 1897, except Sections 9, 10, and 12.

The Report from the Middlewich Urban District states that this Act was adopted in May, 1898.

The Report from Bollington Urban District states that this Act was adopted in 1899, except Sections 6, 8, 9, 10, and 12.

The Report from Nantwich Urban District states that this Act was adopted in 1900.

The Report from Hale Urban District states that this Act was adopted in November, 1900.

The Public Health Acts Amendment Act, 1890.—This Act is also an "adoptive" one, but it does not apply to London. It gives power to regulate public

sanitary conveniences, such conveniences used in common by occupants of two or more houses, or provided for factories or workshops. It empowers the Urban Authorities to make bye-laws for keeping W.C.'s supplied with sufficient flushing water; as to structure of floors, hearths, and staircases, and the height of dwelling-rooms, as to paving yards and open spaces about houses, and as to providing new houses with secondary means of access for removal of refuse, etc.; as to times for removal through the streets of offensive matter, and as to vessels and carts employed being properly constructed and covered. It forbids rooms over privies, middens, or ashpits being used as living or sleeping rooms; and the erection of new buildings on foul sites. It permits all articles of unsound food, even those already sold, to be seized and condemned before seizure. Finally, under this Act the occupier of a registered slaughter-house, convicted of having sold or had for sale unsound meat, may have his license revoked.

In the Report from Bredbury and Romiley it is stated that the District Council adopted this Act in 1896, and that it came in force on January 1st, 1897. The Marple District Council adopted the Act in 1895. During 1893, the Act was adopted by the Runcorn Rural Authority so far as it relates to Rural Districts; and in 1892 it was adopted by the Chester Rural Authority. Early in 1891 the Act was adopted by the Borough of Hyde. It has also been adopted by the Borough of Crewe, and by the Winsford Urban Authority. The Bollington Urban District Council adopted Part 3 in 1899, and the Mottram Urban District Council adopted Part 3 in 1901. However, neither this Act nor the Infectious Disease (Prevention) Act have been generally adopted, and where they have been adopted there is little evidence that the increased powers acquired have been used.

The Private Street Works Act, 1892.—This Act is also an "adoptive" one. It may be adopted in any Urban Sanitary District in England, and the Local Government Board may extend the Act to any Rural Sanitary District or part thereof. When the Act is adopted, any street or part of a street not sewered, levelled, paved, metalled, flagged, channelled, made good, and lighted to the satisfaction of the Authority may be sewered, levelled, paved, metalled, flagged, channelled, made good or provided with the proper means of lighting by the Authority, the expenses incurred in executing such private street works being apportioned on the premises fronting, adjoining, or abutting on such street or part of street, the sums apportioned being recoverable summarily or by action, or in the same manner as private improvement

expenses are recoverable under the Public Health Act, 1875. Also the Authority may, if they think fit, contribute the whole or a portion of the expenses of any private street works.

When all or any of the private street works mentioned have been executed in a street or part of a street, the Authority may, by notice fixed on such street, etc., declare the whole of such street, or part of street to be a highway repairable by the inhabitants at large. And if any street is now, or shall hereafter be sewered, levelled, etc., to the satisfaction of the Authority, then, on application in writing of the greater part in value of the owners of the houses and land in such street, the Authority shall, within three months, by notice put up in such street, declare the same to be a highway repairable by the inhabitants at large.

The Dukinfield Urban District adopted this Act in October, 1896. It was also adopted in 1896 for the portion of Appleton (including Stockton Heath) in the Runcorn Rural District. The Northwich Urban District adopted the Act some time since. In the Report from Hoylake and West Kirby are notes of streets constructed under the Act. In the Report from Bucklow Rural District it is stated that certain streets were put in good order under the Act. The Bollington Urban District adopted this Act in 1899, and it came into force on September 1st. Why so singularly useful an Act as this has not been more generally adopted and used, is inexplicable.

Disinfection by Steam.—An efficient apparatus for disinfecting by steam the clothing, bedding, etc., of infectious patients is a necessary part of the equipment of a Sanitary Authority. Yet a large majority of the Authorities in the County have taken no steps to provide any apparatus for this purpose. At both Hyde and Wallasey there is an excellent apparatus, conveniently near the Isolation Hospital. The Runcorn Rural Authority also have a good apparatus. The steam disinfector provided at Crewe in 1894 has since been much used. It is available for some Districts contiguous, but they rarely make use of it. A similar apparatus erected at Altrincham in the same year works satisfactorily.

The Medical Officer of Health for the Wirral Rural District reports that a good disinfecting apparatus, for disinfecting bedding and clothing by steam, was erected in 1902, contiguous to the Spital Isolation Hospital, and that in 1903 two covered vans were built to convey bedding, etc., to and from this disinfecting apparatus.

The Medical Officer of Health for the Borough of Macclesfield reports that a Thresh (current steam) Disinfector was

purchased for his Borough in 1902, and that it is efficient and easy to work.

In the Reports from twelve districts the need of an apparatus for efficient disinfection of bedding, etc., is mentioned. At Dukinfield during 1896 a deputation from the Sanitary Committee visited Oldham to see the steam disinfector in use there. It seemed to give great satisfaction, and it was recommended that a similar apparatus be provided for Dukinfield; however, at the close of 1905 the Town Council had not decided to obtain a disinfector. The Cheadle and Gatley District Council in November, 1897, instructed their Medical Officer of Health to report on the various steam disinfectors in use. He accordingly made investigations and presented a very complete Report, which is dated February 12th, 1898, but no steam disinfector has yet been provided for the District. The Medical Officers of Health for Alderley Edge, Compstall, Knutsford, Marple, Hale, Wilmslow, and Winsford Urban Districts and for Nantwich Urban and Rural Districts, in the Reports for 1903, 1904 and 1905, drew attention to the need of a proper disinfecting apparatus.

The Medical Officer of Health for Stalybridge reports that his Sanitary Committee have decided to erect a Disinfecting House, and to provide therein a steam disinfector and bath-room, thus affording facilities for disinfecting persons and clothing exposed to infection.

The bedding and clothing should be fetched and delivered by the Authority's officers in light covered vans provided for the purpose. One van should always be used for collecting, the other for delivering, and, to avoid all possible risk of the one being mistaken for the other, it is convenient to have the collecting van painted red and the delivering van painted green.

Disinfection of Premises.—In several Districts carbolic fluid, and packets of carbolic powder are given to those who apply for disinfectants at the Inspector's Office. However, the disinfection of rooms, which have been occupied by infectious persons, appears ordinarily to be done or supervised by the Authority's officers; and what these officers mainly trust to is fumigation, by means of burning sulphur. Now it is worth while asking—Does this "stoving" leave the room much as it was before? If the ceiling be limewashed, if the floor and woodwork be properly washed with carbolic acid and soap and water, and if the walls be stripped and cleaned, the room will be efficiently disinfected. Whether the room has or has not been fumigated with burning sulphur makes very little difference. Indeed, the fumigation may be mischievous, by giving a false sense of security, and leading to the neglect of really efficient disinfection.

Disinfection by burning sulphur having had a long trial (it has been more or less in use since the days of Homer) and been found wanting, it is gratifying to see that it has been abandoned at Crewe. During 1896, the method of disinfection employed in this Borough was that which had been practised in Paris for some years—applying a solution (1 in 1000) of corrosive sublimate to the ceilings, walls, etc., by means of a sprayer. In the Report for 1897, it was stated that the method in use was "sponging or washing the room surfaces with solution of perchloride of mercury." At the beginning of 1899 the equifex sprayer was again in use, but it was found that one of the operators was frequently ill after work, and shewed unmistakable signs of mercurial poisoning (salivation, sore gums, muscular tremors, diarrhœa, etc.) Spraying with corrosive sublimate solution was therefore stopped, and a solution of sodium hypochlorite (1 in 100) was substituted. The spray is still used in many cases, but latterly rooms have been commonly disinfected by formaldehyde lamps.

In the Borough of Macclesfield also formic aldehyde (both as a spray and vapour) has been substituted for sulphurous acid; and instead of carbolic powder and carbolic acid, "chloros" (containing 10 per cent. of chlorine) and chloride of lime are being used. The Medical Officer of Health for Hale has also been trying formic aldehyde for the disinfection of infected rooms. In his opinion a strong point in its favour is that it does not act injuriously on household effects. The Medical Officer of Health for Bredbury has also been trying formic aldehyde lamps, and believes this to be a surer way of disinfecting than trusting to the fumes of sulphur.

At Wallasey both sulphurous acid and formic aldehyde are made use of. It is noted that when the latter is used there is no objectionable odour such as is left after fumigating with sulphur. In this District an apparatus was provided in 1900, for disinfecting library books with formic aldehyde. In Bucklow Rural District premises are being disinfected by formic-sulphugators supplied by the Sanitas Company. It is claimed that they generate formic aldehyde, sulphurous acid gas, and steam. They are portable and easily lighted. This Authority have also a spraying apparatus, but it is too heavy to carry about for any distance. Householders are recommended to use chlorinated lime. In Nantwich Rural District the disinfection of rooms is largely effected by means of formic aldehyde.

Memorandum on Disinfection.—Towards the close of the year 1897, the County Medical Officer of Health was instructed to prepare a short Memorandum on the best means of disinfecting clothing, premises, etc. A Memorandum (dated

December 27th, 1897) was accordingly prepared and printed. This was laid before the Public Health Committee on January 21st, 1898, when the Clerk was authorised to forward copies of it to the Boards of Guardians, and Urban and Rural District Councils in the County, with an intimation that the Committee recommended its general adoption, and hoped that the Boards of Guardians and District Councils would take steps to circulate it among the residents in their several Districts. Prints of the Memorandum were sent out accordingly, and in some parts of the County widely distributed. This Memorandum was re-printed in the Annual Report for 1897; thus all Medical Officers of Health for Districts in the County have had ample opportunity of studying the text. However, as disinfecting by sulphur fumigation is still the routine practice in so many Districts, it may be useful to insert here the following paragraph from the Memorandum:—

"The Disinfection of Rooms can be simply, rapidly, and economically effected by brushing over the ceiling, walls (including woodwork) and floors with a mixture of chlorinated lime and water (one part of good chlorinated lime to a hundred parts of water by weight), or a clear filtrate of the same. Afterwards, the room should be thoroughly aired, and the floor and all woodwork well washed with soap and water."

Systematic Inspection.—Probably it is the Inspector's first duty to give prompt attention to nuisances complained of by tenants or others, or discovered on infected premises. Scarcely of secondary importance, however, is the duty of systematic house-to-house inspection of the District, so that the sanitary condition and surroundings of every house may be known, a record kept, and defects remedied. This duty is not neglected; indeed, many Medical Officers of Health in their Reports recognise its necessity; still, it does not appear to be carried out as thoroughly as it should be. Doubtless, house-to-house inspection is made "when time permits," but if, in any District, it only occasionally happens that time permits, the reasonable conclusion is that an additional Inspector is required. In some Reports the need of an Assistant Inspector is referred to. It is certainly true that by systematic inspection many defects are brought to light and remedied, which would never be complained of.

Extra Work to Inspectors.—All those who have any acquaintance with Public Health matters know that it is a common practice to appoint the same man District Surveyor and Inspector of Nuisances. The result not infrequently is, that the pressing duties connected with the Surveyor's Department take up most of the man's time, and only a small remnant of

each day or week is left for inspection. Unsatisfactory as this practice is, in some instances the public is used to it. There is, however, a growing tendency to thrust upon Inspectors various miscellaneous duties which might properly be left in the hands of the Police. In some Districts the Nuisance Inspector is also the Inspector of Hackney Carriages; in some he has to attend yearly to the renewal of Game Licenses, and in two Districts the Inspector appears to undertake prosecutions for firing chimneys. At least, one Sanitary Inspector issues licenses to deal in petroleum, under the Petroleum Acts; another has thrown upon him duties under the Dogs Act, and two or three are Inspectors under the Contagious Diseases (Animals) Act. Under conditions such as these, it need be no surprise that house-to-house inspection is not going on continuously and regularly in every District.

Abatement of Nuisances.—The word "nuisance," as defined by the Public Health Act, 1875, includes so many things and conditions that it may be said almost every form of pollution of air, ground, or water constitutes a nuisance. Some of these are made the subject of complaint to the Medical Officer of Health or Inspector; some they discover for themselves. In either case, each nuisance is entered in a book, and an attempt made to obtain its abatement. The nuisances are due to various causes, among others insufficient drains and sewers, defective drains and sewers, obstructed drains and sewers, ditches carrying sewage, defective traps, waste-pipes untrapped or badly arranged, waste-pipes directly connected, broken water-fittings, no supply or an insufficient supply, soil-pipes unventilated or ill-ventilated, rain-pipes directly connected, defective rain-conductors or roofs, damp walls, dead rats and mice under floors, offensive accumulations of refuse, defective ashpits, privies or w.c.'s, yards lodging foul water, offensive ponds, dirty or overcrowded houses, animals or birds so kept as to be a nuisance, and excessive smoke from chimneys. Nuisances thus caused are abated without formal notice, or on formal notice, or after proceedings. In some Districts the abatement of a large number of nuisances entered on the books is effected without formal notice, in others a formal notice is served in nearly every case. Further proceedings were rarely necessary in any of the Districts.

The work of obtaining the abatement of nuisances certainly seems to have full attention from Medical Officers of Health, while it very properly occupies a large share of the time of Sanitary Inspectors. As regards 27 Districts, Reports are submitted by the Inspectors, giving particulars of the

nature of the nuisance dealt with, and occasional notes of difficulties or failure. These Reports are all interesting. If they were drawn up on a uniform plan, and a Report were sent in by every Inspector in the County, the information supplied would be most useful.

Very little seems to be attempted, and still less accomplished, as regards the abatement of smoke nuisances. In some Districts where many hundreds of other nuisances are reported, there is but one smoke nuisance or none. However, it is not always the Inspector who is to blame. Creating a smoke nuisance seems to be regarded as quite a venal offence by some District Councils and Magistrates. Yet the presence of smoke implies the presence of noxious vapours (sulphurous acid mainly), and smoke-polluted air exercises a very distinct influence on the death-rate.

Examining Houses on Request.—It may be remembered that in November, 1893, public notice was given in the Borough of Crewe that anyone might have his house examined to ascertain its sanitary condition, free of charge, on making application to the Sanitary Department. The object was principally to enable new comers to the town to ascertain the condition of any house they might contemplate occupying. Several householders have availed themselves of this offer. There can be no reason why this should not be attempted in other Urban Districts.

Examination of New Houses.—It might be thought that requiring new houses to be certified, as fit for human habitation before occupation, would be usual, at least in Urban Districts, but it is not. In some few Districts new houses are examined and certified by the Surveyor, but probably the best plan is to arrange for its being done jointly, by the Medical Officer's and Surveyor's Departments, as is now done at Wallasey. A bye-law requiring new houses to be certified as fit for habitation was brought into force in Crewe in 1897.

If the examining of new houses before their occupation were efficiently done, it would, in many instances, PREVENT nuisances, which is wiser and more economical than allowing nuisances to be caused, and then endeavouring to ABATE them.

Rateable Value of Houses.—In the Crewe Report is a note of the value of houses on the rate-books. It shows that on September 30th, 1905, over 71 per cent. of the houses in the Borough were rated under £10 per annum, and over 95 per cent. were rated under £20 per annum. If similar in-

formation were furnished by other Districts it might throw some light on the incidence of disease and mortality, and aid in the solution of some health problems.

Ashpits, Middens, &c.—The storing of refuse in receptacles in close proximity to inhabited houses is an insanitary practice. The system adopted in many towns where each house is provided with a dust-box or dust-pail to be emptied by dustmen early every morning, is a great improvement on the ashpit system. When, however, privies and ashpits are combined, and every kind of domestic refuse is deposited in the same receptacle, its proximity to a dwelling-house is even more objectionable. Yet these "compound middens" (they go by various names) are very common throughout Cheshire, and in Rural Districts, and some Urban Districts, represent the sanitary arrangements ordinarily provided. The problem that Local Authorities and their responsible advisers have to solve is how to improve the compound middens and reduce to a minimum the nuisance therefrom. There is little doubt the water-carriage system is the most satisfactory where practicable, and consequently the best way of altering the compound midden is to convert it into a w.c. and small dry ash-pit, or (what is better) a receptacle to contain a movable ash-bin. Not so many conversions were effected in 1905 as in some recent years, still, in the Borough of Crewe there were 316 more clean water-closets at the end of the year 1905 than at the end of the year 1904. In the Borough of Hyde 157 privies were converted into water-closets in 1905. In the Borough of Macclesfield 165 privies were converted into water-closets during 1905. Generally, it may be said that slop-water closets are not in favour. The slop-closet is flushed with waste water by means of a tumbler, and in some Districts, when many are in use, they are said to work satisfactorily. They may be adapted to localities where the supply of water is deficient, and where it would be difficult or impossible to procure water for the service-cisterns of ordinary water-closets. In any case the slop-closet is a poor substitute for a closet flushed with clean water. It also needs to be regularly and frequently inspected, as when one is out of order a serious nuisance is created.

In localities where the w.c. is not practicable, the old pit should be filled up to the ground level, the bottom being paved, and the walls cemented over inside. The work of emptying will be made easier, and will probably be done more regularly and systematically, if movable receptacles are provided. Modifying the compound middens in various ways is continually in progress as part of the work of nuisance abate-

ment. In requiring a change, the great point is to be sure that the change specified is the best under the circumstances, and this is far from easy. Occasionally the middens are so large, and bad in form, that it seems impossible to improve them. Such middens have been seen at Dukinfield, Hyde, and Stalybridge. Such structures also exist in Macclesfield Borough. "In some cases," writes the Medical Officer of Health, "the midden is old and dilapidated, resembling a huge cavern with many recesses."

Constructing cesspools which admit the rain-water, and furnishing them with overflow pipes to the sewer, seems to have been not uncommon, at one time, in Middlewich and Winsford, and many of these cesspools still exist. They are referred to with reprobation by the Medical Officer of Health for these Districts, and there is no doubt that they are wholly bad. As regards Winsford, the Medical Officer of Health estimated in a previous Report that there are upwards of 2,000 houses there having privies, mostly old and faulty. "The subsoil of the site upon which the town is built must be thoroughy saturated with organic matter, owing to the use (from time immemorial) of these cesspools, which conjoin leakiness of construction with a size commensurate with the needs of a period of four months."

At Lymm it has been found that many persons "from ignorance, carelessness, or obstinacy, persist in regarding an ashpit as a receptacle for all the waste refuse" in the house: so the Inspector was asked to draw up a notice intimating what articles of refuse should not be placed in ashpits, and appealing to householders to assist the Authority in their efforts to prevent nuisances, etc. Such a notice was accordingly drawn up and printed, and the District Council have had copies pasted on the doors of all ashpits. This was a very simple thing to do, and cost little, yet it is almost certain to do some good. Other Districts may see their way to imitating the example Lymm has set, and thus mitigate in some measure the ash-pit nuisance.

Refuse Removal.—Quite as important as the proper construction of ashpits, etc., is the systematic removal of their contents. In rural places, what is in the midden and cesspool is commonly disposed of on a garden or field belonging to the house, or awaits the convenience of a neighbouring farmer, who removes the stuff at his own cost or even pays a trifle for it. In Townships where water-closets are in general use, the ashpit refuse is practically valueless, so that its removal has to be paid for, and often land has to be found on which to tip it. Certainly, it is one of the duties of the Local Authority

to arrange for this work being regularly done, and at short intervals. In this County, the Local Authorities which have undertaken the work have commonly contracted for its being done under the supervision of the Sanitary Inspectors. The work is probably better carried on when done by the Authority's men, with the Authority's appliances,, without the intervention of a contractor. Of course, where pail-closets are provided, there is more than usual need for regular and frequent emptying. The pails should be supplied in duplicate, and each pail should be cleansed after emptying, and charged with a disinfectant. Cesspools and privy-middens should obviously be emptied at night, and, if practicable, pails also. As to frequency, all Medical Officers of Health are agreed that the emptying should be done at short intervals, but as a fact the pits are not ordinarily emptied until they are full or nearly full. This is all that "well attended to" or "fairly well attended to" commonly means. The Medical Officer of Health of the Chester Rural District advises that the emptying should be done weekly or fortnightly, but it is very difficult to insure this being done. Pails should certainly be emptied once or twice a week, but as regards middens a monthly emptying will satisfy most Authorities. Whether the rule be to empty the ashpit or midden once a fortnight or once in six weeks, it should, of course, be emptied at any time on complaint that it is full.

In the Wallasey Urban District a great improvement has taken place. On July 1st, 1897, the Health Committee began to undertake the collection of nightsoil, etc., with their own staff of men, horses, and carts. The work has since been carried on smoothly and efficiently, in marked contrast to the lax methods followed by contractors in late years, which gave rise to numerous well-founded complaints. In many houses, old as well as new, covered dust-bins have been substituted for ashpits, and as these are fitted with handles, dust is removed from them easily, and with little noise. They are emptied regularly once a week. These are found to be a great improvement. The bins cost but a few shillings apiece, and any householder, by buying one, and giving notice to the Authority, can do away with the ashpit nuisance on his premises. The substitution of covered dust-bins for ashpits is thus continually going on, and a revolution in the old system of refuse removal is being quietly effected. At Hoylake and West Kirby also, the majority of the new houses are provided with movable dust-bins.

At Mottram the refuse removal used to be very badly attended to. After the District had been inspected by an Inspector of the Local Government Board, he reported unfavour-

ably upon it, and advised the Local Government Board to issue an order under Section 42 of the Public Health Act, 1875, requiring the District Council to undertake or contract for the emptying of privies, ashpits, etc. This Order was issued in September, 1897, and came into force in the District on October 1st. The Council subsequently provided a proper covered cart for removing refuse, etc., and contracted for its regular removal.

At Wilmslow, where there has been no regular system of emptying ashpits, the house-tenant having to pay for each emptying, the Authority had decided to undertake the work in 1900; but the Report states that the District Council have not carried out their Resolution to do this work. The ashpits are still emptied badly and irregularly, and the result is more or less a nuisance.

As regards the cost of this work, though the total sum paid is given by many Medical Officers of Health, it is difficult to compare the out-lay in one District with the out-lay in another, without full particulars of the work done, and of the way it is done. In one District (Sandbach) £80 6s. 6d. was received for the saleable portion of the stuff collected in one year; but this must be an unusual experience outside Sandbach. At Crewe, where there are receptacles of all kinds, the cost of emptying was 3/8½ per load in 1897 and 1898; but in 1899, owing to the Corporation having to abandon all tips and send practically all the refuse (whether gathered in the day or night) to the farm, the cost of emptying went up to 3/11 per load, in 1900 the cost was 4/- per load, in 1901 the cost was 4/1¼ per load; in 1902 the cost was 4/-0½ per load, in 1903 the cost was 3/11 per load, in 1904 the cost was 3/11 per load, and in 1905 the cost was 3/11½ per load.

In Macclesfield (a Borough less populous than Crewe) the cost of emptying was 3/1$\frac{1}{12}$ per load in 1898, 3/3$\frac{9}{10}$ per load in 1899, 3/5$\frac{7}{10}$ per load in 1900, 4/3$\frac{9}{10}$ per load in 1901, 3/8$\frac{7}{10}$ per load in 1902, 3/7¼ per load in 1903, 3/10¼ per load in 1904, and 3/5⅓ per load in 1905.

However, it is hardly fair to compare the cost of removal in different towns; so much depends on the distance the material has to be carted before it is tipped. Paying a little more for removal is wiser than depositing the refuse on land which may soon be used for building sites. As showing that this work may be better and more economically done without employing a contractor, it was stated in the Bucklow Report for 1900 that the scavenging contract for Northenden was allowed to lapse as the price showed an upward tendency. The work has since been undertaken by the District Council, and very efficiently carried

out, manual and team labour being engaged direct, thereby saving £100 per annum. Special arrangements should be made for collecting and destroying trade refuse from poulterers, fishmongers, greengrocers, etc.; if this is not done nuisances are almost certain to arise, especially during warm weather. At Crewe the carts for carrying the dry ashes, as well as the nightsoil carts, are covered.

Another duty of the Authority, in reference to refuse removal, is to arrange tips in suitable situations, sufficiently remote from inhabited houses, and providing such tips is often a difficult task. Privy-refuse should, of course, be used promptly on the land.

The use of Pails containing Acidulated Peat, a full account of which was given in the Annual Report for 1894, is still in practice in the Borough of Congleton. During 1905 there were 1,674 pails in use, and 3,810 loads of nightsoil removed. All this nightsoil was manufactured with manure—forming a marly dry powder, almost free from smell. At Knutsford a number of large cesspools have been abolished, and the "Congleton system" has been introduced. The number of pails in use is now 163. They are reported on favourably, and are to be increased yearly, in Middlewich about 240 peat pails appear to be in use. They give satisfaction. At Winsford the "peat pail system" was introduced during 1900. An explanatory circular was drawn up, describing the system, and distributed to property owners. During 1900, 28 pails were installed, and since then the number of pails has been increased to 300. The general adoption of the system is advocated by the District Medical Officer of Health.

Destructors.—The best way of dealing with midden-refuse is by means of cremation, in specially constructed furnaces known as destructors. The process is cleanly and simple. The refuse is packed into large close furnaces, through holes at the top, and burnt. That which is incombustible, after being subjected to an intense heat for a long time, is drawn at the lower part of the furnaces in the form of vitrified cinders or slag, which, when cool, is either thrown into a mortar-mill and ground (taking the place in the mortar of clean sharp sand) or used for path making or some similar purpose. Any iron-waste drawn with the slag is sorted out, and finds a ready market.

During 1902, the only District in which a destructor was provided was Wirral. A steam-disinfector was being provided, and a destructor was built contiguous thereto. Yet there is great need of destructors, especially in the larger Urban Districts. It is getting more and more difficult every year to find land on which refuse may be tipped without creating a nuisance or fouling the

foundations of future houses. If the stuff is tipped in the near neighbourhood of dwelling houses the tenants very naturally complain, and the great cost of cartage prevents the Authority from taking it right out into the country. The Medical Officers of Health for the Borough of Dukinfield, and the Urban Districts of Northwich, Marple, and Neston and Parkgate, refer to the need of destructors. In some towns, where the tip is a long way off, the annual saving in cartage would almost pay for providing and working a destructor. Some time since, a deputation from Dukinfield inspected certain destructors and reported favourably on them, and particularly on the apparatus at Darwen Electric Supply Station. A Sub-Committee from Northwich has also inspected several destructors in use.

At Stalybridge, the Sanitary Committee, in 1903 recommended the provision of a destructor, and in October, a tender to erect one was accepted. When the plans were completed the Local Government Board was approached. The Board raised objections to the proposed site, and the provision of a destructor in this Borough has thus been delayed.

If any District Council wish to inspect a destructor in working they can do so at Hyde or Wallasey. In the last named District an apparatus containing six cells began work in June, 1895, and it proved so useful in dealing with refuse that six additional cells were obtained in 1897. The power developed by the heat generated in this large destructor, is used for the production of electricity to light the premises, and also for turning a mill to grind the clinkers and make mortar, which is sold to builders. The stabling and other buildings for the plant used in the collection of nightsoil, etc., were completed satisfactorily in 1897.

Sewering and Sewage Treatment.—The work of draining, sewering, and providing for sewage-treatment, has been carried forward in almost every part of the county in 1905. At the Borough of Congleton sanction to borrow £16,953, for the purposes of sewerage and sewage-disposal was obtained in 1901. This sum includes the amount required for the purchase of suitable freehold land for sewage disposal. The work of laying sewers was begun in 1901, and good progress was made in 1902-04. The septic tanks were completed in 1904, and so were two of the large bacteriological beds. At the end of 1904, about one-sixteenth of the sewage of the Borough was being dealt with. During 1905 good progress was made, and by the end of the year seven of the bacteriological beds were completed and working. The eighth (and last) bed was nearly finished, and the large roughing filter was in operation, though not quite filled. All the

sewage is being dealt with. The bacteriological beds are circular in plan and the sewage from the tanks is delivered on them by revolving sprinklers. At Crewe, where broad irrigation failed to produce a good effluent, the Corporation, some few years since, completed their arrangement for dealing with the northern outfall sewage on the lines indicated by Dibin. Accordingly a large open septic tank has been constructed, of sufficient capacity to hold one day's sewage, and five primary and five secondary bacteria-beds. During 1902 the septic tank was fitted with scum-boards, the fifth pair of bacteria-beds were finished, and increased aeration provided, and the discharge pipes of all the beds were lowered, so as to drain each bed to the bottom. About four-fifths of the sewage of Crewe is still dealt with by using it for the irrigation of the farm. The effluents from the bacteria-beds (48 samples were tested in 1905) on the whole, have proved very satisfactory. The construction of nine large circular bacteria-beds is under consideration, and plans and sections have been prepared. Dukinfield, with Stalybridge and Audenshaw, takes its sewage to Bradley Hurst Farm, and for carrying out this scheme the Local Government Board sanctioned the borrowing of £58,300. The works were completed and opened in 1900, and during 1901 were generally in use. The sewage is treated by precipitation (without the use of chemicals) and filtration, and then passed on land. The works do not appear to be acting quite satisfactorily. At Hyde, where there are 18½ miles of main sewers, and 10 miles of private street sewers, complaints of effluvia are occasionally received, and the Medical Officer of Health has suggested further ventilation of the sewers. At the Borough of Macclesfield main drainage was completed in 1896, but the connecting of many streets and houses, which previously could not be drained, yet remains to be done. A certain number of these connections are effected yearly. The sewage farm at Butley has not given satisfactory results, and pressure has been put upon the Corporation to take steps to insure a better effluent. The provision of bacteria beds is under consideration. A Sub-Committee, appointed in February, 1903, after visiting many sewage disposal works, resolved that Mr. R. E. Berrington be appointed engineer, to prepare a scheme for the improvement of the works at Butley. Mr. Berrington proposes to enable the works to deal with 1,038,720 gallons in 24 hours, the capacity of the existing tanks being only 482,962 gallons. He will then arrange for the tank effluent to be delivered by revolving sprinklers, on filters circular in plan. The construction of the additional tanks and the new filters, and re-arranging the existing works, is estimated to cost £14,000. During 1904 an Inspector of the Local Government Board held an inquiry with regard to an application of the Town Council for sanction to borrow £14,000 for alterations and extensions at the sewage disposal works,

Sanction was obtained, and the work was commenced in August. 1904. A contract to carry out the work as outlined was let for £9,849. The work is progressing.

At Alderley Edge the new filter-beds appear to be acting satisfactorily. Much of the eight acres of outfall-land will be available for irrigation. A contract for the further improvement of the filter-beds was let in 1904, and the work was completed in 1905. The improvements give satisfaction. At Alsager the filtration area is only an acre and three-quarters in extent, and has become sodden and water-logged. The Medical Officer of Health is of opinion that additional land (2 acres) is much needed. The sewers have but slight fall and require more frequent flushing. At Altrincham, during 1901, the new works in connection with the extension of the sewage farm were begun, and since then good progress has been made. At a portion of the new works sewage is being received and dealt with. At Ashton-upon-Mersey the willow-beds, where the sewage is treated, continue to act effectively. However, the land is now taking all the sewage it can, and in the near future additional land will be needed, or a new system of treatment will have to be adopted.

In the Annual Report for 1901 it was stated that the scheme for the drainage of Lower Bebington had been satisfactorily carried out, and was in operation. This has done much to improve the condition of Bromborough Pool, which was previously much polluted. Higher Bebington, except in the case of a few outlying houses, is well sewered to Lower Bebington sewers. The Higher Bebington District Council pay a small sum for wayleave on sewer, and half the cost of repairs. As regards Bollington, after the amalgamation of Kerridge therewith, an engineer was appointed to prepare a scheme for the consideration of the District Council. With some alterations, directed toward the reduction of cost, the scheme received the provisional sanction of the Local Government Board. As the borrowing powers of the Council are nearly exhausted, the scheme had to be cut down, thus the means of ventilating the sewers will be not so efficient as originally planned, and the size of the filter beds as planned has been reduced. According to the Report of the Medical Officer of Health the new Main Drainage Scheme was completed in July last (1905), and a caretaker has since been appointed to look after the settling tanks and filter beds at the outfall works. The Council have, with as much speed as possible, pushed on the connecting up of the drains from private property to the main drain. The completion of the Sewerage Scheme has caused a large amount of work in alterations to house drainage, a large number of houses having to be re-drained. There are, however, still 215 houses on the line of new sewers, the drains of which are not connected thereto, the

drainage running direct into the brook. The work of connecting these is being proceeded with.

At Bowdon the sewage farm continues to be kept in fair working order. At Bredbury and Romiley the main drainage system is good, and sewerage for the greater part of the district is now complete. The Outfall Works for treating the sewage of Bredbury are at Wharf Meadow, Lower Bredbury. There are now upwards of 700 houses drained to these works. Romiley has separate Outfall Works, and to these 778 houses are drained. Bromborough is on the whole well sewered. The Buglawton Urban District Council have an arrangement with the Corporation of Congleton to receive and treat the Buglawton sewage at the Borough Outfall Works. In Cheadle and Gatley a main drainage scheme was completed during 1901, and extensions were effected in 1903 and 1904. During 1905 about one-and-three-quarter miles of extensions were laid down. The effluent from the filter beds has been reported "good" each time a sample has been taken and analysed. There are still 14½ acres which can be used for land filtration when occasion arises. At present this land is not wanted, owing to a portion of the District having been incorporated with Stockport. In the new Urban District of Compstall, the sewers, which carry slop-water only, have their outlet in a reservoir which stores water for a turbine. It is hardly necessary to point out that this is not an ideal arrangement. Ellesmere Port and Whitby Urban District is mainly sewered where built upon, except as regards a few outlying dwellings, such as those at Whitby Heath. During 1905 extensions were effected along the main road, 566 yards of new sewer being laid.

The District of Hale is fairly well sewered. The sewage when it reaches the Outfall Works is treated in three ways, viz.:—

(1) By septic tank, followed by bacteria beds and broad irrigation.

(2) By chemical treatment (alumino-ferric precipitation), followed by broad irrigation.

(3) By settling tanks and broad irrigation.

The Reports on the effluent during 1905 by the Mersey and Irwell Committee have been favourable, except on one occasion, at a time when a portion of the land could not be used, owing to re-draining operations. The sewer at the Stamford Park Road was not available till the close of the year. During the year the part of the North Watershed scheme between Queen's Road and Bancroft Road was completed, and the portion between Grove Lane and Hale Lodge was commenced. At Handforth, a system of main drainage is still

needed, and should be provided. The drainage into open ditches constitutes a danger to public health. The Medical Officer of Health trusts that definite steps will be taken in 1906 to provide proper drainage for the Urban District. The sewage of Hazel Grove drainage-area continues to be dealt with by precipitation, at the Offerton Sewage Works, which are in fairly good condition. The Bramhall drainage area system and outfall works were completed in 1902, and are in operation. At these works the sewage is dealt with bacteriologically. There are, however, many houses not yet connected, and the Medical Officer of Health suggests that the Authority should insist upon this being done as soon as possible, so that sewage matter may be taken out of the brooks and watercourses. An important addition to the sewerage of the Hazel Grove drainage area has been the construction of a main sewer at Torkington. It was completed in 1903, but not taken over till 1904. The whole drainage system is now in good working order. The sewers are periodically flushed. The outfall works belonging to Hollingworth and Mottram are stated to be acting satisfactorily. At Hoole the sewers are reported to be in good order; they are connected with the sewerage system of the City of Chester, and the sewage is dealt with at the City Outfall Works. Hoylake and West Kirby are well sewered, and the sewers are extended from time to time as required. The new sewer outfall works at Great Meols are in order. Several new sewers have been laid during the year to provide for houses newly erected. The sewers in Grosvenor Road, Devonshire Road, and Kirby Park, West Kirby, were relaid at a cost of £100, owing to having become blocked with tree roots. A new sewer is being laid along Park Road, Meols (to accommodate new property), at a cost of £550. The sewer outfall works at Sandy Lane (lately completed at a cost of £12,000) is working satisfactorily. The deep-level sewer has been constructed and continued to the full extent of Fornall's Green. The houses there are now being connected to the sewer. The outfall works consist of three retaining tanks, built on three levels, to suit the levels of the three new outfall sewers. Flushing tanks have been made, which collect tidal waters to flush out the retaining tanks. The new sewer at Dee Lane (completed in 1903) is working satisfactorily. At Knutsford additional filters seem still needed, and also increased tank accommodation. The sewage disposal land for Lymm is kept under supervision, and continues to act well. Samples of effluent analysed during 1904 were reported on as "good." At Marple the sewers and outfall works are in order. A further scheme for new outfall works has been prepared for Middlewich, and is under consideration. The Report from Nantwich Urban District states

that Mr. Baldwin Latham, C.E., has been retained to advise the District Council as to sewage disposal. He has submitted a scheme, requiring the acquisition of additional land, which is under consideration.

Neston and Parkgate are sewered, and the extension needed is being provided. In the Report for 1903 it was mentioned that the contracts (amounting to £6,233) for the extension of sewers and construction of outfall works, had been let. Good progress had been made with this work in 1903 and 1904. In the latter year 1718 yards of new sewers were laid. The septic tanks and newly constructed (double contact) bacteria beds are in working order. There is also a filter for storm water. There is little to report for 1905, but in this year the sewers were extended 140 yards.

The town of Northwich made practically no progress in 1905. The scheme for sewering and dealing with the sewage of the Castle Ward of the Urban District at Winnington, in Northwich Rural District, may now be said to be complete, and is working well. The bulk of the Castle Ward sewage is being treated at the outfall. The scheme for sewering the lower part of the town has taken longer to develop than was expected.

At Runcorn Urban District, prior to the making of the Manchester Ship Canal, seven sewers conveyed the sewage of the town into the River Mersey direct. After the construction of the canal, six of these sewers were diverted into an intercepting sewer of large capacity, which runs parallel to the canal, and is syphoned under it to discharge into tidal waters. The seventh sewer was culverted under the canal. The sewers are ventilated, and arrangements are provided for cleansing them. The work of improving the drainage of the town is carried on from time to time. At Sale the sewage disposal works are reported to be in good order. At Sandbach the sewage disposal works are still not working, and pollution of the local stream continues. The scheme referred to in the Annual Report for 1903, was not approved, and has been abandoned. New plans have been submitted to the Local Government Board, and, if approved, the work will be proceeded with. An Inquiry by an Inspector of the Board was held in 1905. At Tarporley the extension of the sewers and the construction of the outfall works were completed in 1904, and are in full working order. Many house connections are being or have been made.

The Wallasey District Council's large scheme for reconstructing the main sewers, at the cost of about £30,000, was

sanctioned in 1897, and the work was commenced at Leasowe Road in January, 1898. The work has been going forward ever since. In 1901 and 1902 parts of the town, where there was special need of sewer construction, appear to have been dealt with. During 1903, the outfall sewer north of Egremont Ferry, the outfall sewer in Maddock Road, and the outfall sewer in Magazine Lane, were constructed of cast-iron pipes of various diameters, and now discharge at extreme low-water level. The whole of the very defective sewers in Grosvenor Street, Westmister Road, Wilton Street, Eaton Street, and Belgrave Street, were removed, and new sewers laid in place thereof. In 1904 the most important work put in hand was the sewering of a portion of the Leasowe Road section of the low-lying area of Wallasey, on Shone's system. Another important work was the removal of the defective sewer in Falkland Road and the construction of a new sewer. The work of repairing and re-inverting the main brick sewer along King Street was also commenced in 1904. Progress was made in this work at King Street, and similar work at Brighton Street in 1905. Under a special agreement with the Wirral Railway Company a surface drain (12in. diameter) has been laid along Green Lane, Wallasey. A sewer has also been laid for the intended new street off Poulton Road, near the site for the proposed Council Schools. A long list of streets in which sewers have been reconstructed is given in the Wallasey Report. A number of new manholes, flushing chamber, and ventilator have been put in. At Wilmslow the northern and southern portions of the main drainage scheme are in good working order, and so is the portion passing through Fulshaw Park, which was only completed in 1902. The filtration beds by the riverside at Winsford are said to work efficiently and economically. Though schemes for sewering Yeardsley-cum-Whaley have been under consideration since 1895, the District is not yet sewered. The Medical Officer of Health draws the attention of the District Council to the need of a proper system of sewerage and sewage-disposal.

In the Rural Districts also sewering and sewage works seem to have attention, but much remains to be done. In the Bucklow Rural District the scheme for draining Dunham Massey is being proceeded with. The new outfall was ready three years ago, and the main sewer is nearly finished. The total cost of the scheme will be £16,150. Defective work was found in May, 1904, which was attributed to the contractors. A dispute arose, and all work was stopped. The contractor then took legal proceedings against the District Council. Though the contractor did not succeed, nearly a year's delay was caused. At Timperley the main sewer is a long one, with

a faulty gradient, causing silting. It was lately cleaned out from the Dark Lane outfall to the Railway Station (about 2¾ miles), and the cost of this was nearly £200. The Northenden outfall seems to be fairly efficient, and a scheme is under consideration for its enlargement.

In Chester Rural District the Authority are desirous of having Christleton, Great Boughton, Upton, Newton, and Bache properly sewered, and plans for sewering these Townships to the City of Chester sewers have been prepared. Sanction to borrow the money required has been obtained. The sewage will eventually be dealt with at the City outfall. The works for Christleton and Great Boughton were commenced in June, 1903. The sewering of Christleton is just completed, and many private drains have already been constructed. The lift, which is to raise a small portion of the sewage, has, however, not yet been finally tested. The larger part of the sewerage of Great Boughton has been finished and properly connected therewith. Sewers for the northern part of this township have been laid, but are not yet provided with an outfall. The bad ground met with in the line of sewers has caused delays here, and at Newton, Upton, and Bache. Part of Newton and part of Great Boughton are sewered to the City sewer, and are being extensively built upon. Eaton and Eccleston are sewered, and have outfall works for the purification of the sewage by the Amines process; and works for the purification of the sewage of Pulford, by septic tank and bacteria beds, were provided during 1901. The works were constructed and have been maintained by the owner of the estate. The Report from Congleton Rural District states that the sewers at Elworth and Rode Heath, constructed in 1901, have proved very beneficial to the districts they serve. The improvement effected in the drainage of Holmes Chapel for some time worked well; but latterly it has not been well maintained, and as a result a nuisance has been created. Complaint was made, and the nuisance has since been abated. There is still great need of drainage at Thurlwood and Kent Green. The irrigation grounds at Mow Cop, Mount Pleasant, and Lawton, are worked most satisfactorily. The sewage of the Village of Disley, completed in Midsummer, 1898, is working satisfactorily, but not all connections of house-drains have been made. Furness Vale, in the Disley District, is reported to be still without a proper system of sewerage and sewage-disposal. Attention is also drawn to the necessity of dealing with the sewage of Newtown, in the same District.

In Macclesfield Rural District 16 new houses have been drained into the sewers at Poynton, the number of houses now

draining into these sewers being 476. As regards Malpas, the town is sewered in three outfalls, and at two of them the sewage is treated at bacteria beds in two tiers. In Nantwich Rural District no sewerage appears to have been done during 1905. Main drainage is much needed at some of the larger villages, especially at Willaston, Haslington, Shavington, Church Coppenhall and part of Audlem. The Report from Northwich Rural District states that the sewage of Winnington is now being efficiently treated. In 14 townships there are sewerage schemes, and during the year 700 yards of main sewers were laid, draining 58 houses in Davenham, and one in Leftwich. The improvements at Barnton were in progress at the end of the year. At Runcorn Rural District the Helsby Sewerage Scheme was completed in 1903, and the disposal-arrangements are being worked. They appear to be doing well. The scheme for the sewerage of Halton, and connecting this township with Runcorn town system of sewerage, underwent revision in 1905, and was finally approved.

In Tarvin Rural District plans have been prepared for the purification of sewage at Tattenhall, Tarvin, and Barrow, but the District Council have not yet received sufficient support to enable them to proceed with these. At Barrow there have been serious complaints of pecuniary damage from the want of proper outfall works, and it is very desirable that these works should be proceeded with. The land required seems to have been arranged for. The works for the purification of sewage at Aldford by the "international" process, which commenced working in 1899, were re-constructed in 1903. At the sewage works at Eccleston Ferry, the Scott-Moncrieff process is in use.

In Wirral Rural District the works for sewerage of Little Sutton were completed in 1902. During the same year the Local Government Board sanctioned a loan of £27,500 for the purpose of carrying out the Fender Valley Sewerage Scheme, which provides for the construction of an outfall sewer from Barnton to the culvert within the Borough of Birkenhead, and affords an outfall for the sewage of the townships of Arrowe, Barnton, Bidston-cum-Ford, Landican, Moreton, Noctorum, Pensby, Prenton, Storeton, Thingwall, Upton, and Woodchurch. The western side of the township of Oxton, in the Borough of Birkenhead, can also, by arrangement, use the outfall. This important sewerage work was commenced in the early summer of 1903, and is now completed. It will be ready to convey sewage from the contributory parishes as soon as the sewers of these parishes are finished. The branch sewers have been proceeded with in 1905, and, at present, those for Bidston Village and Prenton are conveying the sewage of these places to the

outfall sewer. The greater part of the sewage of Upton also has been diverted from the stream into which it formerly flowed, and delivered into the outfall sewer. Another sewer has been laid in Upton, and is ready to receive the remainder of the Upton sewage, and part of the sewage of Arrowe. The township of Noctorum has also been provided with a sewer, to which connections are now being made, and from which an extension runs northward into the southern part of Bidston. This receives much of the sewage which formerly flowed into Birkenhead sewers. During the year a contract was let for the sewerage of Moreton, and the work is now well advanced. To meet the views of the Local Government Board a fresh scheme has been prepared for the sewerage of Childer Thornton, Eastham, and Hooton, and application for sanction to borrow the sum required to carry out the work was made in 1903. The Official Inquiry was held early in 1904, and sanction to carry out the scheme was given shortly afterwards. The joint sewerage of Childer Thornton, part of Eastham, and Hooton, is almost complete. The sewerage of the Village of Eastham is finished, and house connections are being made. Contracts have been let for the sewerage of Willaston and Gayton, and the works are being proceeded with. The sewerage of Great Sutton, which has been delayed, is nearing completion. The sewerage of Little Sutton was finished in 1902. Many house connections have since been made. The scheme for the sewerage of Thornton Hough is still under consideration. As regards Grange, an arrangement has been made with the adjoining Urban District of Hoylake and West Kirby, for the reception of the sewage from a row of semi-detached houses in Heron Road. In a previous Report it was stated that application had been made to the Local Government Board for a Provisional Order, granting the powers of the Lands Clauses Acts for the compulsory acquisition of land for the purpose of a scheme for that part of the parish of Spital, in which the Union Workhouse is situated. This matter has gone further, as with the assistance of the Local Government Board, it became possible for the Guardians to deal with the subject themselves. Tenders are now being invited for the carrying out of this work.

Flushing of Sewers and Drains does not appear to be done at all generally, yet it is most useful work and will well repay time and money spent on it. In several of the Reports are references to the matter. At Dukinfield the sewers are said to be regularly flushed, especially in dry weather, and where there is not much fall. At Alsager the flushing is less well done than it would be if the water supply were more abundant. At Higher Bebington and Marple the

flushing is done as required; at Lower Bebington it is done fortnightly. At Bromborough and Hoole the flushing is done regularly. At Hoylake and West Kirby the sewers are flushed fortnightly; while at Bredbury and Romiley they are flushed but six times a year. At Nantwich and Northwich the flushing is stated to be regularly attended to. At Neston and Parkgate the sewers are flushed every week. At Lymm the sewers have been flushed every fortnight for the last six years, and since this has been done no complaints of ill-odours in the streets have been received. A special flushing connection has been made from the water-mains. The Report from Sandbach states that the sewers and drains are flushed. At Wallasey the flushing of the public sewers is in the hands of the Engineer's Staff, and is regularly done. An enormous flushing tank has been procured for the purpose (with a 12in. outlet), holding 1,800 gallons, and systematic flushings with this was begun early in 1898. Three separate gangs are employed for flushing the sewers and back passages. A tank holding 500 gallons is used for the branch sewers, and where the tanks are inapplicable (as in a back passage, etc.), hose piping is used. The flushing of house drains was, during 1897, transferred to the Sanitary Department. The men entrusted with this work have been formed into three gangs. Two of these gangs are occupied in systematic house-to-house flushing, and go over the whole district at least twice a year. The third gang attend to the flushing of drains at houses at wihch cases of infectious disease are reported, especially cases of typhoid fever, diphtheria, and scarlatina. Each gang has been provided with a set of Cooper's Patent Suction Pumps, and thus many drains found choked are cleared without the ground having to be opened.

In Wirral Rural District, the flushing of the sewerage systems at Eastham, Childer Thornton, Heswall, and Upton, is regularly attended to.

Sewer Ventilators.—From time to time complaints are made of effluvia from sewer ventilators. This is usually due to there not being sewer ventilators enough, or to the sewers being "sewers of deposit." If sewers were systematically flushed there would seldom be ground for such complaints. At Hyde, where there have been complaints of effluvia from sewers in a certain district, the Medical Officer of Health recommended the erection of ventilating shafts. At Northwich Urban District, ventilating shafts have been fixed on the main sewers from time to time, as they have been in many other towns. At Alsager, tall ventilating pipes have been attached to trees, and generally act very well;

but during the summer, when the trees are in leaf, these ventilators are not as efficient as others.

At Wallasey there used to be complaints of effluvia from the man-holes. Of late these have not been numerous; however, the District Surveyor continues to erect ventilating shafts in suitable places, and also gas-lamps which, by a special arrangement, are connected to the sewer and so act as ventilators.

Pollution of Rivers and Streams.—A few notes in some of the Reports refer to this, and are not unimportant. At Crewe the pollution of the North and South Brooks by crude sewage and imperfectly purified effluents has been taken in hand, and a special Committee has been appointed to deal with it. Bacterial purification works have been constructed for dealing with about one-fifth of the sewage, and further works are under consideration. The pollution of the River Weaver next in importance to that which take place at Crewe, is the pollution from the sewage at Nantwich, but a scheme for treating the sewage of this town was prepared and submitted to the Local Government Board in December, 1902, and when this scheme was not approved (the Board insisting on the provision of land for treating the effluent) various plots of land were reported on. Recently, Mr. Baldwin Latham, C.E., has prepared a scheme, now under consideration, involving the acquisition of additional land.

Pollution of the River Weaver also takes place in many parts of the Nantwich Rural District.

The River Tame, which has again and again been referred to as very little better than an open sewer, is improved now that the joint sewerage scheme for Dukinfield and Stalybridge has been completed, and the sewage of these two Boroughs is being treated. At Bollington there have been in the past frequent complaints of river pollution, but a scheme for main drainage having been completed in the summer of 1905, probably the larger part of the pollution has been stopped. The District Council have appointed a Special Sub-Committee to inspect the river, and to examine into the causes of its pollution. The investigations of this Committee were not completed at the close of the year 1905. As soon as their Report is presented, no doubt efficient steps will be taken for the prevention of remaining pollution. There is no doubt the River Bollin continues to be polluted, but measures are being taken to reduce this pollution. As regards the sewage purification works at Butley, where considerable pollution has been taking place, the Macclesfield Corporation have taken the matter in hand, and got out a scheme for the improvement and re-arrangement of the works at a cost of £14,000.

The Medical Officer of Health for Nantwich Rural District reports that the streams entering this District from Staffordshire are generally polluted with refuse from mining operations.

In Northwich Rural District there has been some pollution, in 1905, from some of the District Council's outfall works. In Runcorn Rural District the pollution of the Halton Brook still continues, but steps are being taken to remove the pollution. As regards the pollution of the Iron Dish Brook, the Helsby sewage-disposal works (now in operation) should deal with this.

On October 21st, 1898, the County Medical Officer of Health presented a Supplementary Report on the state and condition, with reference to their pollution, or otherwise, of all the Rivers and Streams in the Administrative County outside the area under the jurisdiction of the Mersey and Irwell Joint Watershed Committee; and a series of resolutions were passed relating to all the Sanitary Authorities referred to therein; in many instances the Clerk being instructed to write to District Councils, informing them that pollution of rivers and streams in their Districts was taking place, and requesting that Councils would forthwith take such steps as may be necessary for stopping such pollution, etc. The notes in some of the District Medical Officers' Reports relate to statements made in this Report, or to investigations undertaken in connection therewith. Some of them have just been referred to; other notes, which gave particulars of arrangements made for preventing further pollution, by the construction of sewers and sewage-disposal works, were referred to under the heading "sewering and sewage treatment."

The Rivers Pollution Prevention Act, 1893.—It may be well here to draw attention to an Act passed in 1893, with the object of strengthening the Rivers Pollution Prevention Act, 1876. It enacts that "where any sewage matter falls or flows, or is carried into any stream after passing through or along a channel which is vested in a Sanitary Authority the Sanitary Authority shall, for the purposes of Section 3 of the Rivers Pollution Prevention Act, 1876, be deemed to knowingly permit the sewage matter so to fall, flow, or be carried.

Dwelling-houses unfit for Habitation.—Not much seems to have been done in the Administrative County during 1904 in closing houses unfit for habitation or rendering them habitable. At Dukinfield Borough a list was presented some years ago of 176 back-to-back houses, with full particulars thereon. This list, which includes all the back-to-back houses in the Borough, still has attention. The Report from Hyde states that most of the insanitary property mentioned in the Annual Report

for 1904 has been put into sanitary condition, but that there is other insanitary property requiring attention, and particulars of this are given. At Macclesfield Borough the Medical Officer of Health made a representation to his Health Committee, in 1905, that certain dwelling-houses were unfit for human habitation. The Committee inspected the property, and subsequently resolved that notice be given to the owners in the form prescribed to make such buildings fit for habitation within one month. The houses were afterwards closed. At Alderley Edge a few houses reported as unfit for habitation have been put into good condition. At Altrincham it was noticed in the Report for 1904, that suitable plans had been got out for 11 pairs of small dwelling-houses, and 2 large dwelling-houses, for the very poor at small rent. It is now reported that 4 pairs of the small dwelling-houses are roofed and nearing completion. In Northwich Urban District there appear to be a number of houses unfit for habitation. A Committee of Inspection is engaged in making a comprehensive survey of these houses. Owing to subsidence, general dilapidation is very common.

Considering so little is done, it is important to draw attention to the following passage in a circular issued by the Local Government Board in June, 1900—"Parliament has made it the duty of the Local Authority entrusted with the Laws relating to Public Health and Local Government to put in force from time to time, as occasion may arise, the powers with which they are entrusted so as to secure the proper sanitary condition of all premises within the area under their control, and the Board would point out that a heavy responsibility rests with the Local Authorities if they fail to give effect to the intentions of Parliament in this matter."

Overcrowding.—Judging by the Reports, there is no great prevalence of overcrowding. In most of the West Cheshire Districts it is noted that cases are occasionally reported, but they are infrequent. In Altrincham it is found that the overcrowding noted in 1902 was much less in 1903 and scarcely noticed in 1904 or 1905. There have not been as many workpeople employed at Broadbottom, and the demand for house accommodation has much diminished. At Knutsford the house accommodation is insufficient and some overcrowding seems unavoidable. However, plans for 27 houses were passed in 1905.

The Housing of the Working Classes Act, 1890.—Houses unfit for human habitation can be generally more satisfactorily dealt with under this Act than under the Public Health Act. This Act consolidates and amends many previous Acts on the same subject. Its object is to secure the closure of

insanitary dwelling-houses, and, when necessary, their demolition and replacement by sanitary dwelling-houses. It is applicable throughout the United Kingdom.

Part 1—Unhealthy Areas.—It is made the duty of the Medical Officer of Health to officially inform his Authority when he finds (*a*) any houses, courts, or alleys are unfit for human habitation, or that (*b*) the narrowness, closeness, and bad arrangement, or the bad condition of the streets and houses, or groups of houses within an area, or the want of light, air, ventilation, or proper conveniences, or any other sanitary defect, make the given area dangerous or injurious to the health of the inhabitants of the area, or of their neighbours; and that the evils connected with such houses, courts, or alleys cannot be remedied otherwise than by an improvement scheme, for their re-arrangement and re-construction. And the Authority, if satisfied of the truth of the information thus given them, and of the sufficiency of their resources, are required to make a scheme for the improvement of the area. The Medical Officer of Health is required on complaint from ratepayers, to report on the condition of any area complained of as being unhealthy. The improvement scheme must provide for the re-housing of the members of the working classes displaced by it. In assessing compensation to be paid owners of houses in the condemned area, deductions are made for sanitary defects, and where a house cannot reasonably be made fit for human habitation, only the value of the land and building materials need be paid.

Part 2—Unhealthy Dwelling-houses.—It is made the duty of the Medical Officer of Health of every District to officially inform his Authority of any dwelling-house which appears to him in a state so dangerous or injurious to health as to be unfit for human habitation; and he may be called upon, on complaint of householders, to report on the condition of any house. The Authority are required to cause inspections to be made from time to time of their District, to ascertain whether any dwelling-house is unfit for human habitation, and they must forthwith take the necessary proceedings, before a Justice, to obtain a closing order on receiving a report of a house unfit from their Officer. When a closing order has been made, and the Authority are of opinion that the dwelling-house has not been rendered fit for human habitation, they may order the demolition of the building, time being given the owner to attend and state his objections. It is also made the duty of the Medical Officer of Health to officially inform his Authority of "obstructive" buildings. If any building in his District, though not in itself unfit for human habitation, stops ventilation, or otherwise conduces to make other buildings unfit for human habitation, or prevents proper measures being taken to abate nuisances, it is his duty to report the facts to his

Authority, who shall order the demolition of the buildings, after compensating the owner.

Part 3—Working Class Lodging-houses.—By this part of this Act, which is "adoptive," power is given to Local Authorities to build lodging-houses, dwelling-houses, or cottages for the working classes, or to purchase or lease those existing, and make bye-laws for their regulation, and manage them. Power is also given to Local Authorities to acquire land for the purpose of this part of this Act.

The Housing of the Working Classes Act, 1894.—This explains the provisions of part 2 of the Housing of the Working Classes Act, 1890, with respect to borrowing under a scheme for re-construction.

The Housing of the Working Classes Act, 1900.—This Act was passed to amend Part 3 of the Housing of the Working Classes Act, 1890, *i.e.*, the Part which deals with the provision of Working Class Lodging-houses. Previous to the passing of the new Act, a Local Authority, in the exercise of their powers under Part 3 of the Act of 1890, were not, as it was considered, enabled to provide lodging-houses for the working classes outside their District. This difficulty has been removed by Section 1 of the present measure, which provides that where any Council, other than a Rural District Council, have adopted Part 3, they may, for supplying the needs of their District, establish or acquire lodging-houses for the working classes under that Part outside their District. As regards Rural Districts, hitherto Part 3 of the Act of 1890 could only be adopted after the complicated procedure described by the proviso to Section 54, and by Section 55 of that Act, had been complied with. These enactments are repealed by the present measure, which (in lieu of the requirements prescribed by them) provides by Section 2 that the Council of every Rural District may, with the consent of the County Council, adopt Part 3 of the Act of 1890, either for the whole of their District or for any contributory place or places therein. The new Act also repeals certain portions of Section 65 of the Act of 1890, which deals with the mode of defraying expenses incurred in the execution of Part 3 of the Act. The expenses will continue to be borne as special expenses, unless on the application of the Rural District Council, the County Council declare them to be general expenses. The area of charge will be that for which the part has been adopted. Sub-Section 1 of Section 5 of the new Act enables an Urban Council, with the consent of the Local Government Board, and a Rural Council, with the consent of the County Council, to lease any land acquired by them under and for the purposes of Part 3 of the Act of 1890 to any lessee for the purpose, and under the con-

dition that the lessee will carry that Act into execution by building and maintaining on the land lodging-houses within the meaning of the Act. The Council must insert in every lease all necessary provisions for insuring the using of the land and buildings for such lodging-houses. In particular, provisions are to be inserted binding the lessee to build on the land as in the lease prescribed, and to maintain and repair the buildings, securing the use of the buildings exclusively as lodging houses, and prohibiting any additions to or alteration of the character of the buildings without the consent of the Council. There must also be inserted in every lease a provision for the re-entry of the Council on the land on the breach of any of the terms of the lease. Sections 61 and 62 of the Act of 1890, which contains certain provisions vesting in the Local Authority the management of lodging-houses established or acquired by them under Part 3 of the Act, and enabling them to make charges for the tenancy of the lodging-houses and bye-laws for their regulation, are not to extend to lodging houses thus built and maintained.

If the Rural District Council make default in properly exercising their power of adopting and acting under Part 3 of the Act of 1890, they will be liable to have their powers transferred to the County Council, under Section 6 of the new Act. This Section provides that if a Parish Council resolve that a Rural District Council ought to have taken steps for the adoption of Part 3 of the Act of 1890, or to have exercised their powers under that Part, and have failed to do so, the County Council may, if satisfied after due enquiry that the District Council have so failed, resolve that the powers of the District Council for the purposes of that Part shall be transferred to the County Council with respect to the parish, and they shall be transferred accordingly.

Section 7 deals with the determining of the compensation to be paid for taking land compulsorily for the purposes of Part 3. The compensation to be paid in such cases has, hitherto, been settled by a jury or by arbitrators, or an umpire appointed in the manner provided by the Lands Clauses Acts. It is now enacted that where land is acquired under Part 3, otherwise than by agreement, any question as to the amount of compensation that may arise is to be determined, in default of agreement, by a single arbitrator, to be appointed and removable by the Local Government Board.

The Act does not extend to Scotland or Ireland.

It is a little surprising that not more action is taken under the Act of 1890. In some instances in which insanitary dwelling-houses were closed in the County in 1901, they were closed by means of an order under Section 97 of the Public Health Act,

1875. In some instances, apparently, houses unfit for habitation are not closed owing to the refusal of the Authority to put the Housing of the Working Classes Act into operation. For example, at Middlewich many houses have been reported to the District Council more than once, as unfit for habitation, and action has not been taken thereon. In the Report from the Borough of Macclesfield, it is stated that although there are still a large number of grossly insanitary houses in the Borough, the attempt to deal with them at one time by wholesale closing orders would only result in terrible overcrowding of other dwellings. Perhaps more might be effected if property owners would assist the Sanitary Authority in carrying out their reasonable requirements. The very moderate wages paid those belonging to the staple industry of this town prevents the Corporation undertaking any scheme for building workpeople's dwellings. It would be much more feasible for the Corporation to convert some of the existing insanitary dwellings into healthy ones. Where the property owner refuses to act on the suggestion of the Sanitary Authority or professes himself unable to carry out the reasonable and moderate requirements of the Authority, the Medical Officer of Health thinks it would be well for the Authority to purchase such houses at a moderate sum and put them into sanitary condition. He thinks this might be done without loss to the ratepayers. In the Report from Hale it is stated that the supply of houses for the working classes does not equal the demand. At Knutsford there is great need of considerable additions to the workmen's dwellings. A hope has been expressed that private enterprise would come to the aid of local workpeople. Failing such enterprise, it remains for the District Council to adopt the Housing of the Working Classes Act.

It is remarkable that, while in several Districts the common lodging-house accommodation is recognised to be unsatisfactory, no Authority in the County has built a lodging-house for the working classes, acting under powers which could be obtained by adopting Part 3 of the Housing of the Working Classes Act, 1890.

Possibly the new Act passed in 1903 may make it simpler for Town Councils and District Councils to provide better housing for the working classes.

The Housing of the Working Classes Act, 1903.—This Act amends in several very important respects the law relating to the housing of the working classes, and facilitates very considerably the adoption and enforcement of the Housing Acts by local authorities.

Section 1 (1) provides that the maximum period which may in future be sanctioned as the period for which money may be

borrowed by a local authority for the purposes of the "Housing Acts" shall be 80 years, and as regards money so borrowed, 80 years are substituted for 60 years in Section 234 of the Public Health Act, 1875. Further, Section 1 (2) provides that money borrowed under the Housing Acts shall not, as at present, be reckoned as part of the debt of the local authority for the purposes of the limitation or borrowing under Sub-sections 2 and 3 of Section 234 of the Public Health Act, 1875.

[In this connection the Local Government Board have already made it known that they proposed in future as a general rule, to allow the full term of 80 years for the repayment of money borrowed for the purchase of freehold land, and 60 years for the repayment of money borrowed for the erection of buildings. Where money has been borrowed in recent years for these purposes, the Board will be ready to consider applications for sanction to the re-borrowing of the outstanding balances for 80 or 60 years, as the case may be, from the date of the original borrowing.]

In London a borough council may at present borrow, with the consent of the London County Council, under the Metropolis Management Act, 1855, but under section 190 they are required, in order to form a sinking fund for paying off mortgages created under the Act, to set aside in every year a sum not less than 2 per cent. on the amount of the principal moneys secured thereby, which sum is to accumulate at compound interest. It is now provided, by Section 15 of the new Act, that for the purpose of carrying into effect the provisions of the Act as to the maximum period for which money may be borrowed, 80 years shall be substituted for 60 years in Section 27 of the Metropolitan Board of Works (Loans) Act, 1869, and such sum as will be sufficient, with compound interest, to repay the money borrowed within such periods, not exceeding 80 years, as may be sanctioned by the London County Council, shall be substituted for 2 per cent. in Section 190 of the Metropolis Management Act, 1855.

Under the existing Housing Acts, some of the functions of the Central Authority in regard to London are at present exercised by the Secretary of State, and some by the Local Government Board. Section 2 of the new Act makes provision for an Order in Council being made assigning to the Local Government Board any powers and duties of the Secretary of State under the Housing Acts, or under any scheme made in pursuance of those Acts and the powers of the Secretary of State under any local Act, so far as they relate to the housing of the working classes. Any such powers and duties so assigned will then become powers and duties of the Local Government Board.

The Standing Orders of the Houses of Parliament require that in all Bills for local Acts (including Bills to confirm Provisional Orders) WHICH GIVE POWER TO TAKE LAND COMPULSORILY OR BY AGREEMENT, clauses shall be inserted providing that the promoters of the Bill shall not in the exercise of such power acquire more than a prescribed number of houses occupied by persons belonging to the labouring class, unless they have obtained the necessary approval to a scheme for providing certain housing accommodation.

A Joint Committee of both Houses recommended last year that provision on the subject should be embodied in a general Act of Parliament. This was done by SECTION 3 OF THE NEW ACT, which will apply to all cases where, under the powers given by any future local Act or Provisional Order, or Order having the effect of an Act, land is acquired, whether compulsorily or by agreement, by any authority, company, or person, or where land is so acquired compulsorily under any general Act other than the Housing Acts. The Housing Acts are excepted because they contain special provisions on the subject.

Particulars of the requirements imposed on any such authority, company, or person are contained in the SCHEDULE TO THE ACT, which provides that if in any Borough, Urban District, or Rural Parish, the authority, company, or person have power to take, under the Act or Order under which the land is acquired, working men's dwellings occupied by thirty or more persons belonging to the working class, they shall not enter on any such dwellings until the Local Government Board have either approved of the housing scheme, or decided that a scheme is not necessary. The schedule sets out generally the requirements of a housing scheme, and contains various provisions in relation to the making, enforcement, and modification of such schemes.

By Section 10 of the Act of 1890, where outside London an official representation is made to the Council of a Borough or Urban District, with a view to their passing a resolution in favour of an improvement scheme under Part I. of the Act, and the Council fail to pass any resolution in relation to such representation or pass a resolution to the effect that they will not proceed with such scheme, the Local Government Board are empowered to direct a local enquiry to be held, and a report to be made to them as to the correctness of the official representation, and any matters connected therewith on which they may desire to be informed.

The powers thus given to the Board are supplemented by SECTION 4 (1) of the new Act. This enactment enables them, if, on the report made to them on an inquiry directed as above-mentioned, they are satisfied that a scheme ought to have been

made for the IMPROVEMENT OF THE AREA to which the inquiry relates, or some part thereof, TO ORDER THE COUNCIL TO MAKE SUCH A SCHEME. The scheme may be ordered to be made under either Part I., or Part II., of the principal Act, and the Council may be ordered to do all things necessary under the Housing Acts for carrying the scheme so made into execution.

Where an Order of this nature is made, it will be the duty of the Council to make a scheme under Part I., or to direct a scheme to be prepared under Part II., of the principal Act, as if they had passed the resolution required under Section 4, or Section 39 (as the case may be) of that Act, and to do all things necessary under the Housing Acts for carrying the scheme into effect.

The Order of the Board will be ENFORCEABLE BY MANDAMUS.

It has hitherto been requisite under Section 7 of the Act of 1890, that, upon the completion of an improvement scheme under Part I. of that Act, the local authority should publish an advertisement stating certain prescribed particulars in a local newspaper during three consecutive weeks in the month of September, or October, or November, and should, during the month next following the month in which the advertisement was published, serve certain prescribed notices. Moreover, any Provisional Order made by virtue of Section 8 (4) of the Act of 1890 confirming an improvement scheme has, under Section 8 (6),required for its validity confirmation by Parliament.

SECTION 5 (1) of the new Act will enable the advertisements to be published for three consecutive weeks at any period of the year, and will allow the prescribed notices to be served during the thirty days next following the date of the last publication of the advertisement. Moreover, by SECTION 5 (2) an Order of the Local Government Board confirming an improvement scheme will be effective without confirmation by Parliament in certain circumstances.

SECTION 6 provides power to modify in certain cases schemes made under Parts I. and II. of the Act of 1890.

Cases sometimes occur where it will be found beneficial TO INCLUDE in a reconstruction scheme, under Part II. of the principal Act, some NEIGHBOURING LANDS, although not comprising buildings in themselves dangerous or prejudical to health. SECTION 7 of the new Act will enable this to be done if the council under whose direction the scheme is made are of opinion that the inclusion is necessary for making their scheme efficient. But where this course is adopted, the prohibition contained in Section 41 (2) of the Act of 1890 against giving any additional allowance in respect of compulsory purchase, in settling the amount of compensation, is

excluded from application in the case of any land which may be thus included. The effect of the amendment of the law made by SECTION 7 is virtually to make the provisions of Part II. of the principal Act uniform with those of Part I. in this matter.

Where a Council desired TO OBTAIN A CLOSING ORDER in regard to a dwelling-house in a state so dangerous or injurious to health as to be unfit for human habitation, it has hitherto been necessary for them, under the procedure prescribed by Section 32 of the Act of 1890, before they could obtain the order, to give notice to the owner or occupier of the house to abate the nuisance. The PROCEDURE IS NOW SIMPLIFIED as regards any dwelling-house which, in the opinion of the Council, is either (a) not reasonably capable of being made fit for human habitation, or (b) is in such a state that its occupation should be immediately discontinued. In these cases the necessity for serving such a notice as above mentioned before obtaining a closing order is dispensed with by SECTION 8 (1) of the new Act, which further enables a justice to issue a summons for a closing order, and a closing order to be granted, though such a notice has not been served.

Section 34 of the Act of 1890 empowers the Council to demolish a house in respect of which an order for demolition has been made if the owner himself fails to comply with the order, and requires them to sell the materials, and after deducting the expenses of the demolition to pay the balance of money (if any) to the owner. There is, however, no provision to meet the case when the sale of materials does not cover the COST OF DEMOLITION. This is remedied by SECTION 9 of the new Act, which enacts that, where the amount realised by the sale of materials under Section 34 of the principal Act is not sufficient to cover the expenses incident to the taking down and removal of a building, the Council may recover the deficiency from the owner of the building as a civil debt, in manner provided by the Summary Jurisdiction Acts, or under the provisions of the Public Health Acts relating to private improvement expenses.

A more speedy and efficacious way of OBTAINING POSSESSION OF A HOUSE in respect of which A CLOSING ORDER HAS BEEN MADE, than that provided by Section 32 (3) of the principal Act is afforded by SECTION 10 of the new Act. Under its provisions the local authority may have recourse, whatever may be the value or rent of the house, either to the procedure prescribed by Sections 138 to 145 of the County Courts Act, 1888, or to that under the Small Tenements Recovery Act, 1838. The expenses incurred by the local authority in taking these proceedings can be recovered from the owner as a civil debt under the Summary Jurisdiction Acts. The power of enforcing the penalty provided for in Section 32 (3) of the principal Act will still remain.

The effect of SECTION 11 (1) of the new Act is to empower the Council if they PROVIDE LODGING-HOUSES for the working classes under Part III. of the principal Act, or if they SUPPLY HOUSING ACCOMMODATION under Part II. of the principal Act, or under any scheme made in pursuance of any of the Housing Acts, to provide and maintain, in connection with the lodging-house or dwelling accommodation, any building, adapted for use as a shop, any recreation grounds, or other buildings or land which, in the opinion of the Board, will serve a beneficial purpose in connection with the requirements of the persons for whom the lodging-houses or dwelling accommodation are provided.

Under Section 75 of the Act of 1890, a condition is implied in any contract made after August 14th, 1885, for the letting of a house or part of a house for habitation by persons of the working classes (as such letting is therein defined), to the effect that the house is at the commencement of the holding fit for human habitation.

As this enactment stood prior to the passing of the Act of last session, it would seem that there is nothing to prevent an agreement being made between the landlord and the tenant contracting themselves out of its provisions. Any such agreement made after the date of the passing of the new Act (August 14th, 1903) is made void by SECTION 12 of the new Act.

The service of notices and other documents is facilitated by SECTION 13 of the new Act.

SECTION 14 removes another difficulty which has been experienced in the administration of the Housing Acts in London. In cases where the London County Council carry out reconstruction schemes under the provisions of Sub-Section (5) of Section 46 of the principal Act, the Secretary of State is empowered by Sub-Section (6) of that Section, in certain circumstances, to order a payment or CONTRIBUTION towards the expenses of the London County Council to be made BY THE COUNCIL OF A METROPOLITAN BOROUGH, but hitherto, in the absence of such an Order, the Metropolitan Borough Council have had no power to make any such payment or contribution.

The new Act, by Section 14, enables a Metropolitan Borough Council, if they think fit, to pay or contribute to the payment of any expenses of the London County Council under Section 46 (5) of the principal Act in connection with a scheme of reconstruction, and to borrow any money required for the purpose under Section 46 (2), and provides that an Order of the Secretary of State, as above mentioned, shall not be necessary except in cases of disagreement between the County Council and the Council of the borough.

This Act does not extend to Scotland or Ireland. It came into force on August 14th, 1903.

The Employment of Children Act, 1903.—This Act, which may be noticed here, as the only other Act passed in 1903 which is of importance from a public health point of view, is intended to make better provision for regulating the employment of children. It provides (Section 1) that any Local Authority—that is, the Corporation of the City of London, the Town Councils of boroughs of over ten thousand inhabitants, the District Councils of urban districts of twenty thousand inhabitants, and elsewhere the County Councils—may make bye-laws—

(i) Prescribing for all children, or for boys and girls separately, and with respect to all occupations or to any specified occupation—

(a) The age below which employment is illegal ; and

(b) The hours between which employment is illegal ; and

(c) The number of daily and weekly hours beyond which employment is illegal.

(ii) Prohibiting absolutely or permitting, subject to conditions, the employment of children in any specified occupation.

Section 2 provides that any local authority may make bye-laws with respect to street trading by persons under the age of sixteen, and may by such bye-laws

(a) Prohibit such street trading, except subject to such conditions as to age, sex, or otherwise, as may be specified by the bye-law, or subject to the holding of a licence to trade to be granted by the local authority ;

(b) Regulate the conditions on which such licences may be granted, suspended, and revoked ;

(c) Determine the days and hours during which, and the places at which, such street trading may be carried on ;

(d) Require such street traders to wear badges ;

(e) Regulate generally the conduct of such street traders ;

Provided as follows :—

(1) The grant of a licence or the right to trade shall not be made subject to any conditions having reference to the poverty or general bad character of the person applying for a licence or claiming to trade.

(2) The local authority, in making bye-laws under this section, shall have special regard to the desirability of preventing the employment of girls under sixteen in streets or public places.

Section 3 contains general restrictions on the employment of children, as to the hours within which children shall not be employed, prohibiting the employment of children under eleven in street trading, etc.

Section 4 has some general provisions as to bye-laws, as to their submission to the Home Secretary for confirmation, as to their being made applicable either to the whole or part of the area of the local authority in each case, etc.

Section 5 prescribes the penalties for offences under the Act.

Section 6 deals with the liabilities of agents or workmen for offences under the Act; and Section 7 requires that proceedings for an offence must be instituted within three months after the commission of the offence.

Section 8 gives power to officers of local authorities to obtain justices' orders to enter places of employment; Section 9 deals with employment in factories; Section 10 has a saving for industrial and other Schools; Section 11 deals with the granting of licences to children under ten years; and Section 12 provides for the payment of expenses out of the County rate in the case of counties, out of the borough fund or borough rate in the case of boroughs, and out of any rate or fund applicable for defraying expenses under the Public Health Acts in the case of other urban districts.

The Act is made applicable to Scotland and Ireland, with the necessary modifications. It came into operation on January 1st, 1904.*

At a meeting of the Public Health Committee held on October 23rd, 1903, the County Medical Officer of Health was instructed to report upon this Act, together with his recommendations (if any) thereon, and a brief Report was accordingly submitted in July, 1904. At a meeting of the Public Health Committee held on October 21st, 1904, the County Medical Officer of Health stated the steps he had taken to obtain information with reference to the employment of children from the Councils of Boroughs and Districts in Cheshire, and from County Councils in England and Wales, and said that he could not recommend the framing of any bye-laws under this Act at present.

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* By the prevention of Cruelty to Children Act, which came into operation on October 1st, 1904. Sections 4 (6) and 11 of the Employment of Children Act, 1903, are repealed.

Public Health Act, 1904.—This is an Act, as its title states, "to enable Regulations to be made for carrying into effect conventions with respect to the prevention of danger arising to public health from vessels, and the prevention of the conveyance of infection by means of vessels." The existing law contained ample provision for making regulations for the protection of this country against the introduction of infection from abroad by shipping, and already, with that object, the Local Government Board have from time to time made regulations, those at present in force being the Cholera, Plague, and Yellow Fever Regulations of 9th November, 1896. But it was found that the Board had no precise statutory power to make regulations of the same nature for enforcement in the case of vessels leaving this country, and seeing the freedom of this country from the diseases referred to and the high state of efficiency of the sanitary supervision at all our chief ports, foreign countries ran little risk from the absence of definite regulations on the subject. But the Paris International Convention of 1903 assumed that such regulations would be made and enforced, and consequently it became necessary to obtain from Parliament the definite power to make them before the Convention could properly be signed for England.

The Act consists of one section (apart from the short title), which it may be desirable to quote verbatim:—

"(1) The power of making regulations under the Public Health Act, 1896, and the enactments mentioned in that Act, shall include the power of making regulations authorising measures to be taken for the prevention of danger arising to public health from vessels arriving at any port, and for the prevention of the conveyance of infection by means of any vessel sailing from any port, so far as may be necessary or expedient for the purpose of carrying out any treaty, convention, arrangement, or engagement with any foreign country, and the regulations may in particular provide for the recovery of any expenses incurred in disinfection and of any charges authorised to be made by the regulations for the purpose of those regulations or any services performed thereunder, and also for any powers and duties under the regulations being executed and performed by Local Authorities:

"Provided that the regulations shall not be made except after consultation with the Board of Trade.

"(2) In the application of this Act to Scotland, Part IV. of the Public Health (Scotland) Act, 1897, shall be substituted for the Public Health Act, 1896.

"(3) This Act shall extend to the Isle of Man with the substitution of section eight of the Local Government Amend-

ment Act (Isle of Man), 1897, for the Public Health Act, 1896."

The Act came into force on its receiving the Royal Assent on 15th August, 1904, and adds one more to the already numerous "Public Health Acts."

New Houses and Building Bye-Laws.—The Medical Officers of Health in many Districts supply information as to the number of houses built, as some gauge of the progress made. Erecting new dwelling-houses is obviously the one effectual way of removing the only reasonable excuse for overcrowding; and if thoroughly good building bye-laws are in force in the District, and the houses are well built and drained, and fitted with proper sanitary appliances, the Local Authority is thereby placed in a better position for dealing with insanitary property. On the other hand, if there are no good building bye-laws in force, and each builder is suffered to do what is right in his own eyes, new buildings, instead of being a source of strength, are a source of weakness in a District.

At Crewe the number of new houses (135) for which "habitation" certificates were given in 1905, compares very unfavorably with the average in the seven years, 1898-1904, which was 253. In the Borough of Macclesfield also building operations appear to have been very limited in 1905, the sets of plans deposited were only for 31 houses. Model bye-laws are in force in the Borough, and it has been suggested that a Borough Surveyor should be appointed to see that they are properly carried out.

At Ashton-upon-Mersey, new building bye-laws came into force in 1899. During 1904, 59 houses were completed. At Lower Bebington, building went on vigorously during 1905, especially at Port Sunlight, where workmen's dwellings are excellent, and occupied under favorable conditions. There were 61 new houses completed in 1905, the same number as in 1904. At Bollington, the new building bye-laws, which have for some time been under discussion, were passed on December 19th, 1903. At Bredbury and Romiley, new building bye-laws were approved on February 8th, 1901. There were 42 houses erected in Bredbury, and there were 31 houses erected in Romiley in 1905. At Cheadle and Gatley, 59 new houses were built and occupied during 1905, the majority being in Cheadle Hulme. At Ellesmere Port, the model bye-laws are in force. During 1905, 110 new houses were built and certified. At Hale, building operations are very active. There were 101 more houses in Midsummer, 1905, than in Midsummer, 1904. At Hazel Grove and Bramhall, plans for 72 new houses were approved in 1905. At Hoole, there were 57 new houses erected in 1905. At Hoylake and West Kirby,

plans for 88 new houses were passed in 1905. At Lymm, there were 28 new houses erected and certified in 1905. At Marple there were 29 new houses finished and occupied in 1905. At Nantwich, 17 new houses were completed and certified in 1905. At Neston and Parkgate, 7 new houses were completed and certified during 1905. In Northwich Urban District, 19 new houses were built in 1905. At Sandbach there were 36 empty houses at the end of the year, and building is at a standstill. In Wallasey Urban District, 325 houses were completed in 1905.

Bucklow Rural District Council have a Building Committee to examine and report upon all plans for new buildings. During 1905 there were 90 sets of Plans submitted, and of these 67 were approved as drawn, while 16 were referred for amendment and afterwards passed. The plans approved included those for 113 dwelling-houses. The new Building Bye-laws came into operation on March 8th, 1900. In Chester Rural District the Model Bye-laws of the Local Government Board have been in force for some years. Plans were passed for 26 new houses in 1905. At Disley there is need of more modern bye-laws. In this District 21 new houses were erected in 1905, 12 of which are tenanted. Macclesfield Rural District has good bye-laws. Plans for 58 new dwelling-houses were approved in 1905. All houses are inspected frequently during erection, to see that the requirements of the bye-laws are carried out. In Nantwich Rural District, plans for 88 new houses were passed in 1905. The Council of this District has Urban powers in respect to new buildings. In Northwich Rural District, plans for 46 new houses were passed in 1905. Buildings are carefully inspected in this District during erection. Bye-laws which were revised in 1894, are in force throughout Wirral Ruras District, and Mr. W. Webb-Shennan examines all building planl and acts as Building Surveyor. He reports that during 1905 plans for 144 new houses were passed.

Generally speaking, building operations do not appear to have been exceptionally active in Cheshire in 1904.

New Streets.—The work of making new streets proceeds but slowly. In Ashton-upon-Mersey, Cheadle and Gatley, Hale, Hazel Grove, Lower Bebington, Hoylake and West Kirby, in some of the populous parts of Bucklow Rural District, and a few other "residential" Districts, fair progress is made, but, generally, little seems to have been done.

In several Districts street improvements have been effected, footways have been flagged, and back passages have been paved. In some streets also additional lighting has been provided.

School Accommodation is a subject that may well come within the observation of the Medical Officer of Health, yet it is referred to in very few Reports. In the Borough of Crewe the Schools are inspected, and the teachers notify on forms supplied by the Authority any scholar suffering from measles, mumps, whooping-cough, chicken-pox, "fever," influenza, eczema, and ringworm. The Medical Officer of Health for Bredbury and Romiley inspects the schools in his District, and finds them in order. The Medical Officer of Health for Cheadle and Gatley reports that he inspects the elementary schools from time to time. The sanitary arrangements are satisfactory, and the playgrounds dry and well drained. The Medical Officer for Marple finds the local schools clean and well ventilated. The Medical Officer of Bucklow Rural District notes that the sanitary condition of the various schools and playgrounds in the District is generally satisfactory. Many of the teachers report cases which occur of non-notifiable diseases.

The Factory and Workshop Act, 1901, which came into force on Jan. 1st, 1902, repeals all the existing Factory and Workshop Acts, and consolidates, with numerous amendments, the provisions they contain. The changes introduced into the law by the new Act have rendered necessary a complete revision of the Abstracts used under the new Act, and on and after January 1st, 1902, it became necessary to substitute the new Workshop Abstract for that in use in 1901. A circular letter has been issued by Dr. Whitelegge, Chief Inspector of Factories and Workshops, calling attention to the principal changes affecting workshops, which have been made by the Act, and which are embodied in the Abstract. This circular letter and new abstract have doubtless been received and studied by all Medical Officers of Health.

The Act comprises 163 sections and several schedules grouped under ten parts. The provisions which impose duties and powers on District Councils and their Officers may be summarized as follows:—

Section 1 amends section 91 of the Public Health Act, 1875, so far as factories, workshops, or workplaces, are concerned. It provides that:—

"(1) The following provisions shall apply to every factory as defined by this Act, except a domestic factory:—

"(a) It must be kept in a cleanly state;

"(b) It must be kept free from effluvia arising from any drain, water-closet, earth-closet, privy, urinal, or other nuisance;

"(c) It must not be so overcrowded while work is carried on therein as to be dangerous or injurious to the health of the persons employed therein.

"(d) It must be ventilated in such a manner as to render harmless, so far as is practicable, all the gases, vapours, dust, or other impurities generated in the course of the manufacturing process or handicraft carried on therein that may be injurious to health.

"(2) The provisions of section 91 of the Public Health Act, 1875, with respect to a factory, workshop, or workplace, not kept in a cleanly state, or not ventilated, or overcrowded, shall not apply to any factory to which this section applies."

The section further requires the periodical cleansing of all inside walls of factories, etc., except where a special exemption has been granted by the Secretary of State.

Section 2 deals with the sanitary condition of workshops and workplaces not included in the term "factory" as defined by the Act. To such places section 91 of the Public Health Act, 1875, is to apply, and the District Council, acting on the certificate of their Medical Officer of Health or Inspector of Nuisances, are given more definite and stringent powers than they have hitherto possessed of enforcing proper sanitary conditions.

Section 3 deals with overcrowding and section 4 empowers the Secretary of State, if he is satisfied that the provisions of the Act, or of the law relating to public health, in so far as it affects factories, workshops, and workplaces, have not been carried out by any District Council, to authorise an Inspector to take such steps as may be necessary for enforcing those provisions and recover the cost from the District Council.

Section 5 gives the Factory Inspector powers to enforce the amendment of defects in factories or workshops remediable by the Sanitary Authority when the District Council have neglected to take the necessary steps on their own initiative, and sections 6, 7, 8, and 9, contain provisions as to the temperature in factories and workshops, their ventilation, the drainage of their floors, and the provision in them of sufficient and suitable sanitary conveniences.

Sections 10-18 relate to precautions for the safety of workers, such as the fencing of machinery, the provision of means of escape in case of fire, etc. In connection with this matter section 15 provides that "every District Council shall, in addition to any powers which they possess with reference to the prevention of fire, have power to make bye-laws providing for means of escape from fire in the case of any factory or workshop, and sections 182 to 186 of the Public Health Act, 1875, shall apply to any bye-laws so made." In London, this matter is to be dealt with by the London County Council instead of by the Local Sanitary Authority (see section 153).

In connection with dangerous and unhealthy industries, it may be noted that section 73 requires that every medical practitioner attending on or called in to visit a patient whom he believes to be suffering from lead, phosphorous, arsenical, or mercurial poisoning, or anthrax, contracted in any factory or workshop, shall send to the Chief Inspector of Factories at the Home Office, London, a notice, stating the name and full postal address of the patient, and the disease from which, in the opinion of the medical practitioner, the patient is suffering, and shall be entitled for each notice to a fee of two shillings and sixpence.

Bakehouses are specially dealt with in sections 97-102. Section 97 prescribes the sanitary regulations for bakehouses; section 98 imposes a penalty for a bakehouse being unfit for the purpose on sanitary grounds; sections 99 and 100 provide for the periodical limewashing, painting, etc., of bakehouses, and require proper regulation of sleeping places near bakehouses; section 101 prohibits underground bakehouses, except where they were so used at the passing of the Act; and section 102 imposes on District Councils the duty of enforcing these provisions as to bakehouses.

Laundries are dealt with under Section 103, which applies certain provisions to "every laundry carried on by way of trade, or for purposes of gain," but exempts (sub-section 4) any laundry in which the only persons employed are (a) inmates of any prison, reformatory, or industrial school, or other institution, for the time being subject to inspection under any Act other than this Act; or (b) inmates of an institution conducted in good faith for religious or charitable purposes; or (c) members of the same family dwelling there; or, in which not more than two persons dwelling elsewhere are employed.

"Home-work" is dealt with in Part 6 of the Act (sections 107-115). Section 108 enables a District Council to prohibit, under penalty, the giving out of work to be done on particular unwholesome premises, and section 109 imposes a penalty on the occupier of a factory if he gives out "wearing apparel to be made, cleaned, or repaired in any house or building occupied therewith, whilst any inmate of the dwelling-house is suffering from scarlet fever or small-pox." Under section 110, if any inmate of a house is suffering from an infectious disease, the District Council of the District may make an order forbidding any work to which the section applies to be given out to any person living or working in that house.

Section 125 provides that "for the purpose of their duties with respect to workshops and workplaces under this Act, and under the law relating to public health, the District Council, and their officers shall, without prejudice to their other powers, have all such powers of entry, inspection, taking legal proceedings, or otherwise, as an Inspector under this Act."

Under section 131 every District Council shall keep a register of all workshops situate within their District, and under section 132 the Medical Officer of Health of every District Council shall, in his Annual Report to them, report specifically on the administration of this Act in workshops and workplaces, and he shall send a copy of his annual Report, or so much of it as deals with this subject, to the Secretary of State.

Section 133 provides that "where any woman, young person or child, is employed in a workshop in which no abstract of this Act is affixed as by this Act required, and the Medical Officer of the District Council becomes aware thereof, he shall forthwith give written notice thereof to the Inspector for the District."

By section 154 references in this Act to a District Council, and the District thereof, shall be construed as including references to the Council of a County Borough, and the County Borough; and section 155 provides that the powers conferred by this Act on District Councils shall be in addition to, and not in substitution for, any other powers which they may possess.

The Act applies to Scotland and Ireland as well as to England and Wales.

In nearly all the Annual Reports are references to the new Factory and Workshop Act, and in many are statements as to factories and workshops inspected during 1904. The Reports are

nearly all according to a form supplied, and deal with many details as required. As this Act has now been in force for three years, Medical Officers of Health have become familiar with the new duties imposed upon them, and these seem generally to be carried out efficiently in the Boroughs and Districts in the County.

Lodging-Houses.—Common lodging-houses, that is lodging-houses in which persons of the poorest class are received for short periods, and though strangers to one another, are allowed to inhabit one common room, were doubtless fairly well inspected, but the fact that every common lodging-house must be registered seems to have been overlooked in some districts.

At Crewe the number of common lodging-houses on the Register is 7. These are fairly well conducted. The Authority do what is possible to see that the premises are kept in good sanitary condition. The defective structural character of the buildings makes this difficult. In all 129 beds are provided. Two applications to be put on the Register were refused during 1905. There are, however, very many private houses were labourers and other working men in steady employment lodge.

At Hyde there are 3 common lodging-houses, which, together, provide accommodation for 83 lodgers. A house, which provided accommodation for 23 lodgers, was closed during 1904. The remaining ones are unfitted for the purpose. They are difficult to keep clean, and ill ventilated, and the structural arrangements are bad. The record for the Borough of Macclesfield is no better. The common lodging-houses there are 8 old buildings, not well suited for the purpose. During 1905 these houses accommodated an average of upwards of 89 nightly lodgers. Small-pox invaded two houses in 1903, and the outbreak of small-pox in June, 1904, began in a common lodging-house. The Sanitary Inspector paid 426 visits to those premises in 1905, but it does not seem possible to keep them in order. Medical Officers of Health for the Boroughs point out that the remedy for this extremely unsatisfactory state of things is the erection of a Municipally-owned lodging-house. Such a house, if well conducted, might prove profitable instead of adding to the local rates. No steps have been taken to provide such a lodging-house, though one is much needed. Three years ago some efforts were made to find a suitable site, but the matter was soon allowed to drop, and nothing further done. The Medical Officer of Health for Stalybridge has visited the registered lodging-houses in his Borough frequently, and has found them fairly sanitary. He has lists of lodgers sent to him every week during the year. At Altrincham there were 58 inspections of lodging-houses made. With two exceptions, all were found clean and in order during the

year. At Lower Bebington the number of common lodging-houses is 4, which are all systematically inspected. On two occasions only was there any occasion for complaint. A short time since there were 16 registered lodging-houses in the District. New bye-laws have been in force since 1899. At Hollingworth there is but one common lodging-house, and at Mottram but one; these are kept clean and in order. In the town of Nantwich there are 5 houses on the Register. During the year they were visited almost daily, and found in a clean and orderly condition. The town of Northwich has 7 common lodging-houses on the Register. These have been periodically visited by the Inspector, who notes that one house was reported for the filthy state of the bedding, but on a notice being served the house was cleaned and clean bedding was substituted. In Runcorn Urban District the common lodging-houses have been visited 385 times by the Inspector, and he found no cause of complaint. At Sale the lodging-houses have been inspected as usual. At Sandbach are two large lodging-houses, duly inspected and kept in order. At Wilmslow the lodging-houses have been inspected and found in good order.

At Winsford are three lodging-houses, all inspected and found satisfactory. At Malpas also there are three lodging-houses, all inspected. In Congleton Rural District are six common lodging-houses, which have been inspected and found in good order. The lodging-houses in Runcorn Rural District, are reported to be visited from time to time. At Dukinfield, Higher Bebington, Cheadle and Gatley, Hale, Knutsford, Lymm, and in the Nantwich Rural District, and Tintwistle Rural District, there are no common lodging-houses.

The Cleansing of Persons Act, 1897.—As a want of personal cleanliness is not unusual amongst those who frequent common lodging-houses, a note on this Act may be appropriately introduced here. Its object is to "permit Local Authorities to provide cleansing and disinfection for persons infected with vermin." By Section I. it is enacted that any Local Authority shall have the power, when in their discretion they shall see fit, to permit any person who shall apply to them on the ground that he is invested with vermin, to have the use, free of charge, of the apparatus (if any) which the Authority possesses for cleansing the person and his clothing from vermin. The use of such apparatus is not to be considered to be parochial relief or charitable allowance to the person using the same, or the parents of such person, and no such person or parent shall by reason thereof be deprived of any right or privilege, or be subject to any disqualification or disability. Local appliances, and attendants that may be required for carrying out the Act, and any expenses for these

purposes may be defrayed out of any rate or fund applicable by the Authority for general sanitary purposes or for the relief of the poor. the term "Local Authority" means in England the Council of any County Borough, the District Council of any District, any Board of Guardians, and in the County of London any Sanitary Authority as defined in the Public Health (London) Act, 1891.

There is no mention of any action under this Act, except a statement that the Board of Guardians for the Bucklow Union have provided a steam disinfector for cleansing the garments of all vagrants received into Union premises.

Houses Let in Lodgings.—Any Local Authority may, with the consent of the Local Government Board, make bye-laws for fixing the number of persons who may occupy a house or part of a house which is let in lodgings and for the separation of the sexes in a house so let ; also for the registration and inspection of houses so let, for enforcing drainage and the provision for privy accommodation, and for promoting their cleanliness and ventilation, for the cleansing and limewashing of the premises at stated times, and the paving of court-yards, and for the giving of notices, and taking precautions in case of any infectious disease. This is a very useful power (enabling Authorities to have control over a class of lodging-houses which could not be regulated as common lodging-houses), and to assist Authorities in making use of it, model bye-laws have been issued. Still, it appears that only two Districts in the County (Crewe and Wallasey) have bye-laws relating to houses let in lodgings. The bye-laws have been in force in Crewe since 1877. The bye-laws for Wallasey only received the sanction of the Local Government Board early in 1897. In Wallasey the houses on the Register are regularly visited in the daytime, and occasionally at night. The proper cleansing of rooms, passages, staircases and yards is insisted on.

Water Supply.—By the Public Health Act, 1875, power is given to Local Authorities to construct necessary waterworks, two months' notice of their intention being given to allow of objections being heard by the Local Government Board. The supply must be maintained pure and wholesome, and at a pressure which will carry it to the top storey of the highest dwelling-house in the district supplied. The Authorities may supply to public baths or wash-houses, or for trade purposes on terms agreed on, or may gratuitously supply public baths or wash-houses, established otherwise than for private profit ; and Urban Authorities must provide and maintain fire-plugs, etc., for securing a sufficient supply in case of fire. When the water of any well, tank, cistern, or pump, used for drinking purposes, is reported to an Authority to be so polluted as to be injurious to health, they may apply to a

Court of Summary Jurisdiction, and the Court may cause the water to be analysed at the cost of the Local Authority, and may make an Order temporarily or permanently closing the well. Where, on the report of the Surveyor of a Local Authority, it appears to such Authority that any house within their District is without a proper supply of water and that such a supply of water can be furnished thereto at a cost not exceeding the water-rate authorised by any local Act in force within the District, or where there is not any local Act in force at a cost not exceeding twopence a week, or at such other cost as the Local Government Board may, on the application of the Local Authority, determine under all the circumstances of the case to be reasonable, the Local Authority shall give notice in writing to the owner, requiring him, within a time therein specified, to obtain such supply, and do all such works as may be necessary for that purpose. If such notice is not complied with within the time specified, the Local Authority may obtain such supply, and water-rates may be made and levied on the premises, and any expenses thus incurred by the Authority may be recovered in a summary manner from the owner of the premises; or may, by order of the Authority, be declared to be private improvement expenses

The Public Health (Water) Act, 1878, amends the Public Health Act, 1875, so far as relates to water supply. In makes it the duty of every Rural Sanitary Authority to see that every occupied dwelling in their District has, within a reasonable distance, an available and sufficient supply of wholesome water. If the Medical Officer of Health or Inspector report that a house is without water supply, and the Authority are of opinion that it can be provided at a reasonable cost, not exceeding a capital sum, the interest on which at the rate of five per cent. per annum would amount to twopence per week, or at such other cost not exceeding a capital sum the interest on which at the rate of five per cent. per annum would amount to threepence per week, as the Local Government Board, may, on the application of the Local Authority, determine under all the circumstances of the case to be reasonable, (etc.), they shall serve a notice on the owner, requiring him, within a specified time, to provide a water supply, and at the expiration of this time, if the notice is not complied with, the Authority may serve another notice stating that if the requirements of the first notice are not complied with within a month, they will provide such a supply, and recover the expenses from the owner. This provision does not exempt the Authority from the duty (imposed on them by the Public Health Act, 1875) of supplying their District in cases where danger arises to the health of the inhabitants from the insufficiency or unwholesomeness of the existing supply and a general scheme of supply is required,

and such supply can be got at a reasonable cost. It is not lawful in any Rural District for the owner of a dwelling house, built or rebuilt from the ground floor after the date of the commencement of this Act, to allow the same to be occupied without having obtained a certificate from the Sanitary Authority that a sufficient supply of wholesome water is available. It is made the duty of the Rural Authority, from time to time, to ascertain the condition of the water supply within their District.

These powers would be sufficient to enable every Authority to obtain an adequate and wholesome supply for every household if it were not for the restrictions conveyed in the words "reasonable cost." It often happens that the Medical Officer of Health, Surveyor, or Inspector, reports that a house is without a sufficient supply of wholesome water, but the Authority are not of the opinion that the supply can be provided at a reasonable cost, and so no action is taken; again, supposing danger arises to the health of the inhabitants of a District from the insufficiency or unwholesomeness of the existing supply, and a general scheme of supply is required, if such supply cannot be got at a reasonable cost, the supply is not got. It thus happens that powers relating to the provision of water in the Public Health Act, 1875, and the Public Health (Water) Act, 1878, are in great part inoperative. The Local Authorities are not to blame for this, for often supplying an outlying farmhouse or carrying out a general scheme of supply in a remote, sparsely populated District, is manifestly such an expensive undertaking it would be impossible to be of opinion that the work could be done at reasonable cost. No one is particularly to blame, but as long as the powers given have such limitations, the water supply in many Districts will be insufficient, and shallow wells, liable to pollution from the surface will be used.

The Reports from the towns are as follows:—At Congleton Borough the service is constant, and during 1904 the supply has been fairly satisfactory as regards quantity and quality. The supply for the Borough of Crewe is from artesian wells at Whitmore. It is tested from time to time and found uniformly good. The quantity of water used in 1905 was small, being equal to only 11.8 gallons per head of the population per day. Dukinfield, with Ashton-under-Lyne, and Mossley, in Lancashire, and Stalybridge, jointly own the District Waterworks. The water is gathered from springs and streams in the Swineshaw Valley, and is pure and abundant. The gross supply for Dukinfield in 1905 was 19.14 gallons per head per day higher than the local average. The supply being deficient in dry seasons (as in 1901), a new reservoir has lately been made.

This water, though very pure, is very soft, and when in 1901 it had to be cut off at night during parts of the year some cases of lead poisoning occurred. The water reservoirs are stocked with trout of good size and quality. Manchester Corporation water has been supplied to the higher parts of the Borough of Hyde since 1893. It comes from the reservoirs at Woodhead, and is abundant and of good qcality. Water for trade purposes is obtained from the reservoirs of Hyde Corporation situated at Gee Cross. At the Borough of Macclesfield the general water supply has been abundant, and generally of good quality. It has from time to time been examined chemically and bacteriologically. During 1902 the Town Council made application to the Local Government Board for sanction to borrow £2,500, for the purchase of Lower Ridgeate Farm, Sutton, which abuts on the upper storage reservoir of the Town's Water Supply, and had been polluting the water. In September the sanction asked for was obtained. The reservoirs are stocked with trout. During 1903 there were several complaints as to the quality of the water. After chemical analysis a satisfactory report was received, but a bacteriological examination of three samples showed that they all contained the BACILLUS COLI, and that the water was liable to pollution. In 1904, samples of the town's water, the Hollin's Mount water, and the Hurdsfield water were submitted for chemical analysis and bacteriological examination. The Borough Analyst's opinion thereon is as follows:— "These three waters are free from odour or taste. They are neutral. No poisonous metals were present. The town's water and Hurdsfield water contain a slight sediment. I am of opinion that these waters are of excellent quality and well suited for all purposes." The certificate from the Lister Institute of Preventive Medicine, on the bacteriological examination of the waters conclude in the following words:— "The town's water shows great improvement when compared with the results obtained previously; but the waters from Hollin's Mount and Hurdsfield seem to be in the same condition as they were when the last examination was made."

In 1905 (during May), three samples were sent for chemical analysis and for bacteriological examination. The Borough Analyst reports—"On the whole these samples are better than those of last year, showing chemically a higher degree of purity. As representing a water supply they are all of excellent quality, and suitable for all domestic purposes." The certificate from the Lister Institute of Preventive Medicine, on the bacteriological examination of the waters, concluding with the following remarks on the examination are significant— "The total number of organisms per cub. cent., is low and

satisfactory, and the number of organisms of intestinal type which are present is not large, though sample No. 3 is suggestive of pollution as judged by this test. The proportion of the total number of organisms, however, which are capable of growth at body temperature is very high (nearly $\frac{1}{2}$ in the average), and this is extremely suggestive of undesirable contamination. The water cannot be said to be satisfactory as long as this proportion between organisms growing at 22o and at 37o remain so high."

Alderley Edge is supplied from the Stockport Water Works Company. This water was good in 1903, but in parts of the District complaints are occasionally received of discolouration. A few houses only depend on pump wells. At Alsager the inadequacy of the water supply is recognised by the District Council, and a Committee has been appointed to improve the supply, but no course of action has yet been decided on. A number of houses are without water supply, several are dependent on shallow wells, imperfectly protected and liable to be contaminated. On several occasions the advice of experts has been sought as to the best means of providing a sufficient supply, but the advice given has not been followed. The present reservoir, at a minimum estimate of ten gallons per head per day, represents a four days' supply. A small supplementary reservoir should be provided for the supply of Lindley. Complaints with reference to water-supply reached the Medical Officer of Health in an Urgency Report on June 13th, 1905. The supply for Altrincham and Ashton-upon-Mersey is derived from Manchester, and distributed by the North Cheshire Water Company. It has been tested from time to time and found satisfactory. In 1905 and in recent years the supply appears to have been sufficient at Altrincham, but it is sometimes a little scanty at Ashton-upon-Mersey. Public Baths were opened at Altrincham during 1901, and are likely to meet a long felt want. Higher and Lower Bebington have very good water from the West Cheshire Waterworks. Of late, this water has become hard, and efforts are being made to have it softened. The Company are willing to soften the water if empowered to recover the expenses by an addition to the water-rate. Works for the water-supply of Bollington were practically complete on February 18th, 1899. The extension of the mains in the added portion of the District has been effected, and almost the whole of the houses have been connected to the mains. In the Report for 1901 it was stated that the yield from the bore-hole had so greatly diminished that this District Council had to limit the supply to two hours a day, reducing the consumption per head per day from 19 gallons to 6 gallons. The Local Government Board then insisted on an additional water-supply being obtained, and steps were taken to do this. The work of connecting the supplementary supply

from Dane Bent has been rapidly pushed forward, so that this may be available if required. As delay was experienced in obtaining the Local Government Board's sanction to the proposed reservoir as planned, this portion of the work was not carried out. However, the laying of a new main direct to the bore-hole was accomplished in August, 1902, and the original works have since proved ample for the supply of the whole District. Twenty-one new houses were thus supplied in 1903, and 26 old houses. The Report for 1904 states that the supply continues very satisfactory, and it is hoped that the amount will be sufficient for all emergencies. Bowdon continues to have a sufficient supply of good water from Manchester. The District of Bredbury and Romiley has a good supply of wholesome water, obtained through the Stockport Corporation from the Woodhead reservoir. During 1904 the mains were extended by laying 290 yards of pipes to supply 127 houses and outlying property. Nearly the whole of the District is now supplied with Manchester water. Mains are being extended into the portion of Brinnington recently added to Bredbury to supply farms and cottages. In Bromborough Urban District the Pool Works Village is supplied from deep wells belonging to Price's Patent Candle Co., and the remainder of the District has the good deep wells of the West Cheshire Waterworks. Buglawton has a good supply from the local Waterworks, which were completed in 1895. Cheadle and Gatley are supplied from the Stockport District Waterworks. Ordinarily the supply is sufficient for the needs of the District. In the autumn of 1902 the supply to Cheadle Hulme was curtailed for a few weeks, in 1903 there was no curtailment, but at times the water was so discoloured and turbid, as to be hardly fit for domestic purposes. In 1904 there was curtailment of supply during the prolonged dry weather in September and October, and at times the water was very discoloured. The Compstall water supply is obtained from springs on the upland and stored in two reservoirs. The water is soft, clear, and of good quality. The supply is practically unlimited. The District of Ellesmere Port and Whitby is supplied from the West Cheshire Waterworks. The water supply in Hale is satisfactory. Handforth is supplied by the Stockport Corporation. The water is of good quality and sufficient. Hazel Grove and Bramhall have a good supply from the Lyme Park reservoirs of the Stockport Corporation. Some householders have, however, to depend on well water. One of these (Kinsey's Well) was analysed in 1905 and was declared unfit for domestic use owing to hardness. The Medical Officer points out that "There is very great danger of percolation from two large heaps of nightsoil within a short distance of this well. It is particularly necessary to draw

attention to this case, as it is a well which has enjoyed special reputation for yielding good water for many years." The well appears to be still in use. The Report from Hollingworth and Mottram is that the supply which is taken from the Manchester Corporation reservoirs is pure and usually plentiful. Hoole is supplied by the Chester City Waterworks, except at Piper's Ash. Hoylake and West Kirby have an excellent supply from deep wells at West Kirby. The Company supplying water to Knutsford, it will be remembered, yielded to the public demand for a purer water, and began boring at Booth Mill, in the middle of 1906. Sandstone was touched at a depth of 776 feet, and it was hoped that a good supply would be obtained. Unfortunately an accident to the bore-hole happened on April 30th, 1898, and it took till November 17th, 1899, to rectify it. Boring was then resumed, and continued more or less slowly, in 1900 and 1901. The Report of the Medical Officer of Health for 1902 is as follows :—" At last boring at Booth Mill has been abandoned. A depth of nearly 2,000 feet was reached without satisfactory result. The water-supply, therefore, remains as before, taken from a stream admitted on all hands to be polluted; but so far not showing any obvious results to the detriment of the public Health." The Medical Officer of Health, in view of what took place at Maidstone, is " bound to believe that circumstances might arise which would be very serious; but the majority of the inhabitants appear to take little note of the risk." The Report for 1903 states that the water-supply " remains as before." The Reports for 1904 and 1905 state that " this water is ample in quantity and although it does not yield the best test on chemical analysis, yet it stands the test of experience, for no actual ill-effects have ever been attributed to its use." He admits, however, that " there is an undoubted element of risk in the source of supply."

Lymm is supplied by a Company, and the water has been analysed from time to time by the Medical Officer of Health and by an independent Analyst. The results show that this supply is a pure potable water. Certain private supplies " are not above suspicion," and some of these are closed from time to time. Several cottages are dependent on surface water, where good town's water could be laid on. Marple has a good supply, which is laid on to all but a small percentage of the houses. It is obtained in bulk from Stockport Corporation filters at High Lane, and is daily pumped into the service reservoir at Wybersley. It is of good quality, but the drought caused shortage of supply between June 26th and September 4th. The amount consumed during 1905 was 17,818,143 gallons (including water for flushing). This is equal to about $8\frac{1}{3}$ gallons per head per day—a very small supply. At Middlewich, the Waterworks (completed in 1896) continue to

yield a supply, but it is found to be deficient in quantity, especially during dry weather. The District Council have devoted much time to the consideration of means to increase the supply. During 1905 much time was devoted to maturing a scheme for obtaining water from the Township of Delamere, where it is proposed to construct a Reservoir. The water will be brought therefrom to Middlewich by main. The whole cost it is estimated will be about £14,800. Particulars and plans have been submitted to the Local Government Board.

At Nantwich Urban District water is still supplied from the Baddiley Waterworks. The supply continues discoloured and the pressure is unsufficient. The long continued dry weather in the Summer of 1904 severely taxed the resources of the Waterworks. Numerous complaints were received. The question of obtaining a supply from the Liverpool Corporation mains (jointly with Nantwich Rural District) was further considered in the early part of 1904, but as the Council failed to obtain this water at a lower price than that at which it had previously been offered (9d. per 1000 gallons), the scheme was abandoned as being too costly. Mr. Baldwin Latham was retained as Consulting Engineer, to advise as to another mode of supply. He submitted two schemes, both of which have been considered, viz. :—(1) a scheme for the enlargement of the storage at Baddiley, and for increasing the main capacity from the waterworks to the town ; and (2) an alternative scheme for obtaining water from the Checkley District. The latter was strongly recommended by Mr. Baldwin Latham. Negotiations for acquiring a site for the construction of new Waterworks have occupied much time during the year 1905, and are now practically completed.

The District of Neston and Parkgate has a supply of high organic purity, from its own Waterworks, the water being derived from deep wells. Seven houses were newly supplied in 1905. There was no extension of water-mains during the year.

At Northwich Urban District the whole of the domestic supply is from the District Council's mains, by constant service from the Cote Brook springs—a supply of great purity. However, the quantity is limited, and during 1905 this necessitated cutting off the supply during the night for a long period. To meet the demand a Committee has been appointed to consider the advisability of sinking a new bore-hole, at the Cote Brook Waterworks. The Wade Brook supply is only used for street-watering and sewer-flushing. The supply for Runcorn Urban District is obtained at present from a deep well situated on Runcorn Common. The well is about 300 feet deep, and (it is believed) about 70 feet below the bed of the River Mersey. Water is pumped from the well into a large receiver situated on

Runcorn Hill, and distributed by gravitation to the whole District. The Authority took over the duties of a Limited Company about 11 years ago. The supply is plentiful. Samples are submitted from time to time for chemical analysis or bacteriological examination. No indication of sewage filtration has ever been obtained. The water is, however, rather hard for a public supply. Sale has a good supply from the North Cheshire Waterworks. This water is from the Manchester Corporation Reservoirs at Woodhead. The town supply of Sandbach is water derived from an upland source and treated by Clarke's process. The water is very pure, and continues to be amply sufficient not only for Sandbach but also for the Townships supplied through Congleton Rural District Council. New tanks were added to the plant used for softening the water in 1898-99, to enable the Authority to deliver a perfectly clear water. With few exceptions all the houses in the District on the pipe where the private supplies have been condemned have been connected with the District Council's mains. Owing to the large quantity of oxide of iron in the crude water a good deal of sediment deposits in the gravitation main, thus obstructing the flow of water and increasing the friction in working. A new 10in. gravitation main has been put in and new machinery obtained. Only one main is used at a time, so that the other may be cleaned out without interrupting in any way the supply of water. The Council will thus have a second main available in the event of a break down. At Tarporley the town is well supplied with water from the Liverpool Waterworks. The water is soft, and care is taken not to use lead pipes in any part of the house service. There are upwards of 300 houses and premises now in connection with the mains. In parts of the District are ordinary wells, other parts are supplied from springs, the water from which is of excellent quality. Part of the Township of Rushton (comprising 5 farms and 5 cottages), lately in need of water, was in 1903 supplied by a main connected with the Liverpool Waterworks. Wallasey Urban District has a good supply. The average quantity used per head per day in 1905 was 33.90 gallons. As was stated in the Annual Report for 1904, a supplementary supply has been obtained from the Liverpool Waterworks. Some time since, owing to the old Poulton Wells, Nos. 1 and 2, having become impregnated with too large a proportion of salt, it was felt that it was not safe to depend entirely on the Seaview Road Well. After long consideration it was decided to apply to Liverpool to provide Vyrnwy water. This was done, and a pipe line was laid from near Norton Tower, in the Delamere District, from the Liverpool main line. This Supplementary line was commenced on October 10th, 1903. At present 500,000 gallons daily are taken from this source. Wilmslow Urban District has a good and sufficient supply from

the Stockport Corporation Waterworks. This water (from the bore-hole in the new red sandstone) is pumped into softening plant, where it is treated with lime. As raised from the bore-hole the hardness is about 14 degrees of Clarke's scale, and after treatment it is from 6 to 7 degrees. The supply is good and ample. Three samples from private wells were analysed during 1905. In two cases, the analysis being unfavourable, the wells were closed, and town's water laid in place thereof. At Winsford the public supply is derived from springs in the Townships of Little Budworth, and is generally satisfactory in quality and quantity. At Yeardsley-cum-Whaley the new reservoir at Stoneheads supplies a part of the District. During 1899 the District Council entered into a provisional agreement with Colonel Cotton-Jodrell for the acquisition of his water-rights at Stoneheads and Diglee. The District Council also made application to the Local Government Board for sanction to borrow £7,000 to carry out an efficient scheme for furnishing the District with water. An Inquiry was held by an Inspector of the Board in September, 1900, and in the summer of 1901 the Board sanctioned the borrowing of the sum named. During 1902 this public water supply was completed, and a large number of houses have been supplied in 1902-5. However, there are still several houses without good water. The whole District should be supplied at an early date.

Supplying Rural Districts with sufficient water of good quality is, of course, relatively much more difficult and costly than supplying Urban Districts, and for the reason already given is often impracticable. The Reports from the Rural Districts are as follows :—In the Bucklow District, the North Cheshire Water Company supply Timperley, Dunham Massey, and Northenden. In other parts of the District there is no good general supply. In soms parts it is difficult to find good water. In 1902 the Medical Officer had to report a serious failure of water in many wells in Dunham Massey, owing to the abstraction of subsoil water by the cutting for a sewer. However, after the cutting was filled up the water returned to the wells. In Chester Rural District part is supplied by the Chester Waterworks, part from Wirral Waterworks, and part from Wrexham Waterworks ; elsewhere some of the houses have good well-water and some water which is unsuitable or deficient in quantity. Christleton, Newton, and Upton have supplies from Chester Waterworks. During 1889 the extension of the Chester water-mains to Great Boughton was accomplished by private enterprise. Great Saughall, Capenhurst, and part of Mollington are supplied from the Wirral Waterworks. Mollington was in 1903 given a supply from the Chester mains, the principal landowners contributing four-fifths of the initial expenditure. The Rural District is traversed by a large conduit taking Vyrnwy water

to Wallasey, and this may become a further available source of supply. A few houses are being supplied therefrom. In the Congleton Rural District most parts are reported to be well supplied with water; but Rode Heath and Thurlwood are much in need of water. The District Council are endeavouring to obtain water from Holmes Chapel, which is in great need of it. There are also a few cottages at Tetton with only very inferior water. It was mentioned in the Report for 1903 that water had been supplied to the Parish of Lawton by the North Stafford Company. A letter from Dr. Crutchley, of Alsager, dated December 1st, 1904, was sent to the Rural District Council, making complaint that Rode Heath and Thurlwood had not a reasonably satisfactory supply of water. It was pointed out that many of the shallow wells now in use, though possibly not so bad as to permit of their being condemned, are so near cess pools that they may become specifically polluted at any time.

The Disley Rural District is almost wholly within the Stockport water supply area. The village of Disley is supplied, but during the summer of 1904, as in other years, the supply was usually turned off at night. Arrangements should be made for an increased supply. Further waterworks, being constructed in the Kinder Watershed, will enable the Corporation to improve their supply, but the Corporation should be pressed for some temporary advance works, which will permit of a constant supply being given to Disley. Furness Vale is within the limit of supply of the Corporation of Stockport, but no supply has yet been provided. The property owners were asked if they were willing to have a water supply laid on to their houses by the Stockport Corporation, but the majority declined the offer, so the tenants have to continue to obtain their water from local sources, and this is often of a very inferior quality. The District Medical Officer of Health urges the Council "to take steps to prevent the majority of the inhabitants of Furness Vale having to drink contaminated water, as is the case at present." In 1902 the Stockport Corporation extended their water main from Springfield to Newtown, with the result that the supply to Newtown was improved. However, in the summer, the supply was intermittent as at Disley.

In Macclesfield Rural District the proposal to purchase water under the provisions of Section 61 of the Public Health Act, 1875, from the Corporation of Macclesfield, and to distribute it in several Townships was the subject of an Official Inquiry by the Local Government Board in 1903, and on receipt of the Board's sanction the work was at once taken in hand. Water mains have been laid in the Townships of Upton, Fallibroome, Prestbury, Butley, and Tytherington. On the completion of the works, copies of the regulations, scale of charges, and forms of application for supply

were sent to the owners of all the houses en route. Where there was a dilatoriness on the part of the owners in availing themselves of the supply, Statutory Notices were served. The water is now in use at every house on the line, except two, which have private supplies of a satisfactory character. At Upton 36 houses have been supplied, at Prestbury 34 houses, at Butley 49 houses, at Tytherington 23 houses, and at Taxal 73 houses. As regards water for Rainow, the source of supply, which was the subject of negotiations two years ago, having been secured, proposals for the collection, storage and distribution of this water were formulated and approved in 1902, and submitted to the Local Government Board with an application for sanction to a loan of £1,000 wherewith to construct the works. An Official Inquiry was held by a Local Government Board Inspector in 1903, and the loan was sanctioned. Since then the Parish Council have petitioned the Rural District Council not to proceed in carrying out the scheme. A petition to the same effect, signed by a large majority of the ratepayers, including the occupiers of three-fourths of the houses to which the proposed supply would be conveyed, has been received by the Rural District Council. The Waterworks at Poynton, which are owned by Lord Vernon, were extended during 1903 by the laying of 1,800 yards of water mains, the construction of a pumping station, and a new small service reservoir for the higher parts of the Township. The pumping machinery is driven by a gas engine. Thirty-four houses were newly supplied in 1903, and 27 houses were newly supplied in 1904. The number of houses now supplied from these works is 506 in Poynton. In Chorley 12 additional houses were supplied from the Stockport Corporation water-main, making a total of 39 in this Township. In Sutton, Mr. Whiston's water-mains were extended to convey water to two new houses in Coalpit Lane. This water-main now conveys water to 100 houses. In May, 1905, several cases of typhoid fever were notified from Sutton Lane Ends, where the water-supply is undoubtedly insufficient. Upwards of 50 houses are more or less dependent upon a dip-well, the in-flow to which, in dry seasons, diminishes to less than 100 gallons in 24 hours. It was proposed that water should be purchased under Section 61 of the Public Health Act, 1875, from Macclesfield Corporation, and, as it is not under sufficient pressure for distribution throughout the neighbourhood, to raise it by means of a hydraulic ram (driven by impure water) to a service reservoir, high enough for such purpose. The proposal was submitted to a Council's Meeting and was there rejected as the undertaking would not be at once self-supporting. To meet this objection as far as practicable appeals were made to owners of property which would benefit by the undertaking, to contribute to the cost, but no contribution was offered. The Surveyor has

since been instructed to prepare plans and estimates for the needed work, in order that application may be made to the Local Government Board for sanction to borrow the money required.

In Malpas Rural District, the supply to the town of Malpas and to the Township of Bickley is from the Liverpool mains, but it is not constant, and in outlying parts of the District the inhabitants are dependent on private wells and springs, several of which are liable to pollution. Attention has been directed to the water-supply of Marbury, and a very good supply was, during 1902, brought into the centre of the village by the Lord of the Manor, who is the principal landowner. The water is conveyed into a tank, from which it is pumped, providing a free supply to the inhabitants. In 1903 water was brought for some distance for the supply of the school and adjacent houses. There is little progress to report in Nantwich Rural District. During 1905 no water-mains were laid by the Rural District Council, but additional mains were laid by private owners in Cholmondeley (800 yards) and in Wetton Hall (1,810 yards). These lengths of main, if added to the lengths of mains noted in the last Annual Report, make a total of 277,541 yards, or 157½ miles of mains laid in the Rural District. Mains laid by private owners prior to 1901 are not included. Seventy-eight additional houses have been supplied with water from the township's mains during the past year, making a total of 4,110 houses supplied by mains in the District since 1879. The consumption of water throughout the whole District during 1905 was 65,771,000 gallons, and in addition to this 1,233,000 gallons were supplied to Bickley for the Malpas Rural District. The consumption per house per day for 1905 was 54.7 gallons, and the consumption per head of the population was 10.4 gallons. The pressure throughout the District has been generally satisfactory. The Stapeley Waterworks are in good order, but the drought of 1905 was so great at times as to affect many water-works depending upon rainfall, such as these works, and at times the reservoir had to be supplemented from other mains.

In the Northwich Rural District there are now works for water-supply in 23 Townships, and the supply to the Union Workhouse (in the Urban District) has also been maintained. Thus, about 17,000 of the population have an uninterrupted supply. Of the remaining 5,650 about half have a fairly good supply from pump wells, but the rest are much in need of good water. The part of Winnington till lately supplied with shallow wells, has been supplied from the mains of the Northwich Urban District Council. At Bostock a supply has been established for the village at the cost of a property owner, the water being pumped by a wind-mill into an elevated surface tank. At Barnton there has been considerable extension of water-mains, and larger

pumps have been fixed for increasing the supply. Wimboldsley is still without good water. Occleston and Little Budworth also are much in need of good water, the Shelton Wells, on which they depend, yielding in many instances water of doubtful quality. Eleven samples of water were submitted for analysis in 1905. Of these 4 were certified as "bad," and were accordingly dealt with. One pump-well, from which a sample was taken, was closed by Justices' Order.

In Runcorn Rural District, portions of Appleton, known as Stockton Heath and Wilderspool have a good and plentiful supply of water from the Warrington Waterworks, and the greater portions of the villages of Walton Superior, and Moore are supplied from the same source. During 1900 the Warrington Corporation obtained the necessary powers to extend the Waterworks system further into the Rural District. This extension will prove of great benefit to Hatton, Stretton, and such contiguous areas as will be traversed by the extended water-mains. At Acton Grange the water-supply is not yet quite satisfactory, though many of the houses have recently been provided with Warrington water. The supply of a portion of Bartington is still defective, but an attempt to obtain water by gravitation has been begun, and seems likely to succeed. Engineering difficulties of an unexpected character have caused delays. As the water-mains have been extended to Daresbury, this village has a good supply—a large proportion of the houses have already been connected. At Dutton, water has been obtained from the Vyrnwy mains, owing to the site of the new Isolation Hospital being in this Township. Supplies from these mains have been given to 16 houses contiguous, six of which are farmhouses. There were many bad or indifferent water-supplies at Stretton, a fact which was illustrated by an outbreak of enteric fever in 1901. An almost complete survey was made of the various water-supplies in this Township, and a series of 26 waters were analysed in 1902. Only four samples proved "first-class water." Negotiations for giving an improved supply to this Township are going on. As the suggested extension of the Warrington water-mains to Stretton implies their being laid through a portion of Appleton, houses along the pipe line will no doubt be provided with Warrington water. At Thelwall an extension of the Warrington water-mains has been made to the village, and many houses and a few farms have been supplied. The Thelwall supply will be available for a portion of Grappenhall. The remaining portion of Grappenhall is supplied by a private Waterworks belonging to one of the principal landowners, and erected at his cost. In 1904 the Warrington mains were extended to Higher Stretton, where about a dozen houses and farms have been supplied. The other portion of Stretton may be supplied by a further extension. Aston Heath

is still in need of good water, and should be supplied from the Liverpool mains. The improved supply at Clifton continues good. Halton, Weston Point, and the village of Weston are supplied from the Runcorn Urban Authority's Water works. The village of Norton is supplied with Liverpool water, but the mains require to be extended. The scheme for supplying Sutton from Liverpool mains, which was carried out in 1898, continues to prove satisfactory. Alvanley still requires an improved water-supply. It is possible that an extension of mains to Alvanley may be made, now that the Rural District Council have acquired the Helsby Waterworks. Supplying Frodsham has proved a success, and the undertaking is self-supporting. All the houses in the Township, with seven exceptions, are connected with the mains, and these seven have good water from wells. At Frodsham Lordship all the houses available have been connected with Frodsham mains. At Kingsley, the upper part of the Township is much in need of water. Nothing has been done to improve the supply for years. Thus, as the Medical Officer of Health points out, Runcorn is exceptionally well supplied for a rural district, water being obtained from the four public supplies, that is to say, viz. :—the Vyrnwy Water-mains, the Warrington Corporation water, Frodsham Works, the Helsby Works. There appear to be only three Townships in urgent need of supplies, viz. :—Norley, Bartington and Appleton. At Norley all the available water-supplies are being analysed previous to deciding on a water-scheme for the Township. Supplies to Bartington and Appleton are not likely to be long delayed.

In Tarvin District the supply is mainly from shallow wells or surface springs. However, the villages of Aldford, Churtos and Saighton, are supplied from the Wrexham Waterworks, the mains having been extended by the Duke of Westminster, who also caused Waverton to be supplied with water from a well, the water being raised by a windmill. The village of Ashton has been supplied by the owners by means of a gravitation scheme. At Harthill and Kelsall are gravitation supplies from wells, provided by owners of property for their tenants. The District Council have lately expended £4,500 in works of water supply for the Townships of Beeston, Tilstone Fearnall, and Tiverton. There has been a greater demand for this water than was anticipated, and an increased supply has just been provided. The village of Tarvin is dependent on ordinary wells for water, one of which was constructed by the Rural Sanitary Authority. The water from some of the wells is not good, and all the wells are in some degree liable to pollution. Several efforts have been made in past years to introduce a pure supply from without, but a large proportion of the ratepayers oppose it on account of expense.

In Tintwistle the water is good and plentiful. Wirral Rural District is generally supplied from the West Cheshire Waterworks, except Bidston-cum-Ford, and Noctorum, which are supplied from the Birkenhead Waterworks; and Moreton and Saughall Massie from the West Kirby Waterworks. The West Cheshire water has of late become unduly hard, and much inconvenience has been caused thereby. Efforts are being made to get it softened. Wirral Rural District is traversed, but not supplied, by a large pipe conveying water from Vyrnwy to Wallasey.

There is a Report presented quarterly by the County Analyst giving particulars of the results of analyses of samples of water submitted to him from the Urban and Rural Districts, and the County Council take steps to ascertain what action is taken by the several Authorities, for preventing water certified as bad, or of doubtful purity, from being used for domestic purposes. Out of 99 samples analysed in 1905, there were 6 certified as "very bad," 7 as "not good," 2 as "unsatisfactory and not fit for domestic use," 11 as "not recommended," 14 as "requiring filtration," and 4 as "very hard."

The Purification of Water by Copper Sulphate.—In the Report from the Borough of Macclesfield for 1904 is a reference to a new method of purifying water by means of copper sulphate, familiarly known as blue vitriol. It has been known for some time that copper destroys bacteria, but the metal has not been much used for this purpose, as it was generally believed that the quantity of copper salt required to purify water would poison the water. Dr. George T. Moore has recently announced that he has discovered how to get the good effect of copper without in any way endangering the wholesomeness of the water.* He uses the copper salt so diluted that it cannot hurt the water drinker, and yet it is active enough to destroy in four or five hours the virulent bacilli which spreads cholera, typhoid fever, etc. It is alleged that in water which has had sufficient copper sulphate added to it, and has been allowed to stand, no trace of copper can be detected. The copper is quickly precipitated as a hydrate and carbonate, and perhaps, also, in an organic combination, so that after sedimentation the whole of the copper is removed from the water.

There can be no question that the whole matter requires re-investigation. Experiments as to the effect of small quantities of copper sulphate in purifying water are now being made at Macclesfield Borough Waterworks.

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* Bulletin No. 64, Bureau of Plant Industry, Department of Agriculture United States of America.

The District Councils (Water Supply Facilities) Act, 1897.—This Act will probably be especially helpful to those who are endeavouring to obtain a proper water supply for houses in sparsely populated localities. Its object is to give facilities to District Councils in Rural Districts, to make arrangements with landowners to charge their estates, for the purpose of assisting in the provision of a supply of pure water. In the memorandum which accompanied the Bill, it was pointed out that, at present, limited owners—that is, persons entitled to any lands subject to any mortgage or charge thereon—and their powers, come under the Limited Owners' Reservoirs and Water Supply Further Facilities Act, 1877, by which they have power to carry out the supply of water by going to Land Improvement Companies, spending their own money, or borrowing it, with the approval of the Board of Agriculture. The Act of 1897 provides that all owners, limited or otherwise, may make arrangements with Rural Councils, with the concurrence of the Board of Agriculture, and gives power to all owners to charge their estates, or provide the money for an extension of water mains. The Act is permissive, and does not extend to Scotland or Ireland. It is to be read with the Improvement of Land Act, 1864.

Dairies, Cowsheds, and Milk Shops.—Under the Dairies, Cow-sheds, and Milk Shops Orders, it is unlawful for any one to carry on the trade of cow-keeper, dairyman, or purveyor of milk, unless registered by the Local Authority. No one is allowed to begin to occupy a building as a dairy or cow-shed unless he makes provision to the reasonable satisfaction of the Authority for its lighting and ventilation, including air-space, cleansing, drainage, and water supply, and he must give the Authority a month's notice, in writing of his intention to occupy. Dairies and cow-sheds, new or old, can only be occupied as long as the lighting, ventilation, air-space, cleansing, drainage, and water supply, are such as are necessary for the health and good condition of the cattle, the cleanliness of milk vessels, and the protection of milk against infection or contamination. It is unlawful to allow any person suffering from a dangerous infectious disorder, or having been recently in contact with such person, to milk cows, or in any way help in the milk business, and unlawful for a cow-keeper or dairyman to offend in a similar way. A milk store must not be used as a sleeping room, or for any purpose incompatible with the cleanliness of the milk. No w.c.'s, etc., are allowed to communicate with a dairy or milk store, and pigs are not allowed to be kept in a cow-shed. The milk of diseased cows must not be mixed with other milk, or be sold or used for human food, and must not be used for the food of swine or other animals until boiled.

Local Authorities may make regulations for the inspection of cattle in dairies, for prescribing and regulating the lighting, ventilation, cleansing, draining, and water supply of the dairies and cowsheds, for securing the cleanliness of milk stores or shops, and milk vessels, and for prescribing precautions to be taken against infection and contamination.

Doubtless the terms of these Orders are very well known to the Medical Officers of Health and Inspectors in the County, and they endeavour in their various districts to see that the law is carried out. Still, in a few districts, no regulations appear to have been made, and without precise regulations it is impossible to insure that premises, cattle, and milk are kept clean and in order.

In the Annual Report for 1900, full information was given as to the action taken by the Public Health Committee of the County Council to bring the provisions of the Dairies, Cowsheds, and Milkshops Orders under the attention of Councils of Boroughs and Districts in the Administrative County, to induce those who had not made Regulations to make them, and to induce those whose Regulations were out-of-date to make new and satisfactory Regulations. It was there stated that nine Authorities had not made Regulations, and in the Annual Report for 1901 it was stated that there were still five Authorities which had not made Regulations. These Authorities were the Town Council of Stalybridge, and the Urban District Councils of Hazel Grove and Bramhall, Hollingworth, Mottram, and Yeardsley-cum-Whaley. None of these made Regulations during 1902, 1903, 1904, or 1905.

No doubt considerable interest has been aroused in the subject, and in 44 out of the 54 Annual Reports sent in, there is some reference to dairies and their regulation. Many Reports state the number of persons registered, the number of persons added to, or removed from the Register, the number of visits to dairies, etc., made by the Inspector, with remarks on the defects observed, and notices served to remedy the same, etc. In three Reports are notes of special interest. In the Report from Crewe it is stated that whilst nearly all the dairymen and milksellers comply with the letter of the law, in few instances is that scrupulous attention given to cleanliness which its importance demands. "There are" writes the Medical Officer of Health, "129 premises on the Register, where a retail trade in milk is carried on, and 47 cowsheds. The structure of these cowsheds leaves much to be desired. In milkshops, the need for greater cleanliness is very apparent. What is required is more frequent scrubbing of floors, counters and shelves, the prohibition of the sale in the same shop of strong smelling vegetables (onions), pickles, paraffin oil, etc., and the provision of a suitable cover for the milk vessels." The Report from Wallasey shows that there is a District

in the County which in its Regulations requires 800 cubic feet of air-space for each cow, and insist upon having it. On several occasions slight instances of overcrowding were reported in 1905. On intimating this to the cowkeeper the cattle in excess were immediately transferred to other cow-houses, and no legal proceedings were necessary in any case. The Report from Bucklow shows that this is a Rural District in which a really earnest attempt has been made to grapple with the difficulty of keeping rural cowsheds and dairy premises in good order. The progress made has so far been slow, but much in the right direction seems to have been accomplished.

The Dairies, Cowsheds and Milkshops Order of 1899.—This Order, which is dated February 7th, 1899, was issued to amend Article 15 of the Dairies, Cowsheds, and Milkshops Order of 1885, altering the said article, so that for the purposes of the provisions of paragraphs (a) and (b) thereof, the expressions in the Article which refer to disease shall include in the case of a cow, such disease of the udder as shall be certified by a veterinary surgeon to be tubercular.

The Local Government Board in a circular-letter addressed to Councils of Boroughs and Urban Districts, and dated March 11th, 1899, make the following remarks explanatory of the Dairies, Cowsheds and Milkshops Order, of 1899 :—

Article 15 of the Dairies, Cowsheds, and Milkshops Order of 1885 provides that at any time if disease exists among the cattle in a dairy or cowshed, or other building or place, the milk of a diseased cow therein (a) shall not be mixed with other milk; and (b) shall not be sold or used for human food.

The term "disease" in the Order is limited to those diseases which were included under the Contagious Diseases (Animals) Act, 1878, of which Tuberculosis is not one, and the Royal Commission on Tuberculosis state in paragraph 39 of their Report that "the evidence abundantly shows how "this fact has precluded local authorities from any attempt "to deal with Tuberculosis in milch cows, although they may "have shown themselves alive to the danger, and anxious to "provide a remedy," and they express the opinion that "it "is desirable that the Order should be made applicable to "all diseases of the udder in cows of which milk is offered for "sale."

The Board have issued an Order to amend Article 15 of the Order of 1885 by providing that, for the purposes of paragraphs (a) and (b) of the Article, reference to disease

shall include, in the case of a cow, such disease of the udder as shall be certified by a veterinary surgeon to be tubercular. The Board think that it will be competent for the Council to employ and pay a veterinary surgeon with a view of obtaining a certificate under the Article, as amended, or to appoint him as an officer for this purpose, if they think fit to do so.

Model Regulations: Dairies, Cowsheds, and Milkshops.—With the circular letter just referred to, the Local Government Board sent a draft form of Model Regulations for the use of Local Authorities. The Board state that representations had been made to them, that it would be desirable that they should issue Model Regulations for the guidance of Councils in making Regulations under Article 13 of the Dairies, Cowsheds, and Milkshops Order of 1885, but that they had deferred doing so, pending the Report of the Royal Commission on Tuberculosis. That Report having been made, the Board caused some Model Regulations to be prepared and enclosed copies. The following is an extract from the circular letter referring to the Regulations:—

It will be observed that No. 8 of the Regulations, which deals with the question of air-space in cow-sheds, does not apply to cow-sheds the cows from which are habitually grazed on grass land, during the greater part of the year, and when not so grazed, are habitually turned out during a portion of each day, and it is obvious that a regulation on this subject which might be adapted to cow-sheds in towns, where the cows are kept and fed within the building, might be unsuitable for cow-sheds in the country, where the cows are regularly grazed on grass land during the greater part of the year, and are during the rest of the year usually turned out for a portion of each day.

The Royal Commission, in their recommendations, drew a distinction between the rules which should be observed on this subject as regards cow-sheds situate in populous and those situate in non-populous places, but no indication was given as to the means by which this distinction was to be made. It is clear that it could not be accomplished by any test of population, or by adopting the geographical limits of Urban and Rural Districts, without creating anomalies which would be indefensible.

Neither is it easy to say how the distinction can be carried out, except upon the plan suggested by the Board, which seeks to give effect to the chief difference between cow-sheds in towns and cow-sheds in the country, or in other words between

the case of cows which are kept entirely as a rule indoors, and that of cows which are usually turned out to graze.

It will be noticed that No. 4 of the Model Regulations, which provides that every cow-keeper must cause every cow-shed in his occupation to be sufficiently ventilated, and for this purpose to be provided with a sufficient number of openings into the external air, to keep the air in the cow-shed in a wholesome condition, applies in both classes of cases.

If the Council have not already made regulations under the Order of 1885, the Board think that they should do so, and that any such regulations would with advantage be based on the Model Clauses. If the Council have already made regulations under the Order, the Model Clauses may usefully be considered in connection with any fresh regulations, or amendment of the existing code, which the Council may propose to make.

The Board's confirmation of any regulations which may be made by the Council will not be required, but, if at any time the Board are satisfied on inquiry with respect to any regulation, that the same is of too restrictive a charcter, or otherwise objectionable, they may direct its revocation; and the Board suggest, that the draft of any regulations which the Council may propose to make should be sent to them for consideration, before the regulations are formally adopted.

Unsound Meat, &c.—The statutory powers under which unwholesome food is now ordinarily seized and dealt with in the provinces, are contained in Sections 116 to 119 of the Public Health Act, 1875. Any Medical Officer of Health or Inspector may at all reasonable times inspect and examine any animal, carcase, meat, poultry, game, flesh, fish, fruit, vegetables, corn, bread, flour, or milk, exposed for sale, or if deposited in any place for the purpose of sale, or preparation for sale and intended for the food of man, and if any such animal, carcase, etc., appears to the Medical Officer or Inspector to be diseased or unsound or unwholesome, or unfit for the food of man, he may seize and carry it away in order that it may be dealt with by a Justice. If it appears to the Justice that the animal, carcase, etc., so seized is diseased or unsound, or unwholesome, or unfit for the food of man, he shall condemn the same and order it to be destroyed, etc., and the owner is liable to fine or imprisonment. Any person who obstructs or impedes an Officer when carrying into execution these provisions is liable to a fine. A search warrant may be obtained to search for unsound food kept or concealed in any building. The inability to examine and seize any food when sold, and the inability of the Justices to condemn certain kinds of

unsound food, and food sold, and food not seized, have been remedied by Section 28 of the Public Health Acts Amendment Act, 1890. Any Urban or Rural Authority, by adopting this section, may effect the required change as far as relates to the Authority's District.

The powers of Medical Officers of Health and Inspectors to seize, and obtain an order to destroy, any kind of unsound food are therefore ample ; yet there appears to be very little food condemned in the County. Either there is practically no trade in unsound meat, etc., in this large County, or the trade is not interfered with. The subject is only alluded to in eleven Reports. In the Borough of Crewe the butchers call the attention of the Medical Officer to any carcase in which abnormalities are found after slaughter, and if, on examination, the carcase appears unfit for human food, the owner is allowed to give up the carcase voluntarily for destruction. This local organization goes by the name of the Butchers' Vigilance Association, and is reported to be of great service to the Authority. Owing to the supervision of the Association over the trade, "the quality of meat exposed for sale is of a high standard."

During 1905 the inspection of 9 carcases was invited at the slaughter-houses. The whole carcase was condemned as unfit for human food, and voluntarily surrendered in two instances. The other carcases were passed, subject to destruction of the affected portion. The disease in each case was tuberculosis. Several carcases of animals which had died from anthrax were also examined, in company with the Veterinary Surgeon. These were all cremated. In the Report for Hyde it is stated that no unsound meat was on sale during 1905. In the Borough of Macclesfield there were 1,240lbs. of beef, 57lbs. of mutton, 20lbs. of veal, 12lbs. of fish, and 13 carcases of pigs submitted for inspection and destroyed. The 13 pigs represent animals affected by outbreaks of swine-fever. At Bollington, 2 carcases of beef affected with tuberculosis were destroyed, representing 1,080lbs. As in each instance the owner drew the attention of the Authority to the condition of the carcase, no proceedings were taken. The amount paid for the carcases by the butcher was £27 10s. 0d. The Report from Cheadle and Gatley states that no unwholesome food, so far as is known, was exposed for sale in the District in 1905. The Medical Officer of Health for Middlewich states that it is commonly believed that unsound animals are killed and the carcases dressed for human food in this District, the meat being sent away for consumption, but it is almost impossible to detect offenders. At Sandbach, inspection of slaughter-houses is frequently attended to, but no diseased meat was discovered during the year. The only note of this subject from Bucklow Rural

District states that meat, fish, &c., were duly inspected, and all found in good order. The Medical Officer of Health for Nantwich Rural District reports that it is usual for the butchers in the District to ask for the examination of doubtful carcases, and it has been made widely known that this duty will be undertaken. Accordingly various carcases were examined by request during the year, and when unfit for food were destroyed with the consent of the owners. Early in the year the Medical Officer seized, at Haslington, 2 carcases of meat which were diseased and unfit for food, and these were destroyed. The Council subsequently ordered the prosecution of the butchers who owned them, and they were both convicted and fined. In Runcorn Rural District, carcases of meat were examined on five occasions, but all were passed. At Wallasey the amount of unsound or diseased meat destroyed was not very large, considering the importance of the meat trade of the District. There were in all 6,406lbs. of beef, 2,582lbs. of mutton, 11,942lbs. of veal, 36,891lbs. of offal, removed from the slaughter-house and destroyed, making in all 57,821lbs. There were 1,400lbs. of meat, &c., removed from butchers', fish, and poultry shops, and destroyed.

At the private slaughter-houses in Wallasey Urban District there were 1018 visits of inspection made, and 8029lbs. of meat, etc., were removed and destroyed in connection with this inspection. Of this amount there were 5054lbs. of beef, 311lbs. of mutton, 1418 lbs. of pork, and 1246 lbs. of offal.

Instruction to Meat Inspectors with regard to Tuberculosis in Animals intended for Food.—In the circular letter of the Local Government Board (dated March 11th, 1899) already referred to, are the following instructions to Meat Inspectors.

The Royal Commission recommended that the Board should "be empowered to issue instructions from time to time for "the guidance of meat inspectors, prescribing the degree of tuber- "cular disease which, in the opinion of the Board, should cause a "carcase, or part thereof, to be seized.

"Pending the issue of such instructions we are of opinion "that the following principles should be observed in the in- "spection of tuberculous carcases of cattle :—

"(a) When there is a miliary "tuberculosis of both "lungs	The entire carcase and all the organs may be seized.
"(b) When tuberculous lesions "are present on the pleura "and peritoneum	
"(c) When tuberculous lesions "are present in the mus- "cular system or in the "lymphatic glands embed- "ded in or between the "muscles.....	
"(d) When tuberculous lesions "exist in any part of the "emaciated carcase..... ...	
"(a) When the lesions are con- "fined to the lungs and "the thoracic lymphatic "glands	The carcase, if otherwise healthy, shall not be condemned, but every part of it containing tuberculous lesions shall be seized.
"(b) When the lesions are con- "fined to the liver	
"(c) When the lesions are con- "fined to the pharyngeal "lymphatic glands	
"(d) When the lesions are con- "fined to any combination "of the foregoing, but are "collectively small in ex- "tent	

"In view of the greater tendency to generalization of "tuberculosis in the pig, we consider that the presence of tuber- "cular deposit in any degree should involve seizure of the whole "carcase and the organs.

"In respect of foreign dead meat, seizure shall ensue in "every case where the pleura have been 'stripped.'"

The Board do not consider it necessary at present that anything should be added to these instructions, or that they should be modified, and the Board think that the Council should direct those of their officers who are employed as Meat Inspectors to act in accordance with the principles thus laid down.

The Board may at the same time draw attention to Article 19 (7) of their General Order of the 23rd March, 1891, with respect to the duties of an Inspector of Nuisances in relation to the inspection and seizure of meat. They may point out that where an Inspector of Nuisances is appointed under that Order,

or under any Order superseded by that Order, he is required by the Article, in any case of doubt arising under it, to report the matter to the Medical Officer of Health, with a view of obtaining his advice thereon. The Board think it desirable that any such Inspector of Nuisances should be reminded of this provision.

Memorandum on Tuberculous Meat.—Owing to the not infrequent occurrence of tuberculosis in cattle intended for human food, it was thought that it might be of assistance to farmers and butchers to have by them a brief pamphlet setting forth the symptoms of the disease in the living animal and the signs of the disease in the carcase and organs after slaughter.

Accordingly an official Memorandum on Tuberculous Meat was prepared in July, 1903, by the County Medical Officer of Health and Chief Veterinary Inspector.

Copies of this Memorandum were furnished to the Councils of Boroughs and Urban and Rural Districts within the County, and the Chief Constable was asked to permit the Police to hand copies of the same to farmers and butchers in the Parishes under their supervision.

Slaughter-houses.—Urban Authorities may provide Public Abattoirs, for the regulation of which they may make bye-laws. It is a pity this power is so seldom used, as private slaughter-houses, whether licensed or not, are very liable to cause a nuisance. For the purpose of enabling any Urban Authority to regulate slaughter-houses within their District, the provisions of the Town's Improvement Clauses Act, 1847, with respect to slaughter-houses are incorporated with the Public Health Act, 1875. The sections of the Town's Improvement Clauses Act referred to (Secs. 125 to 131) provide (a) that the Urban Authority may license such slaughter-houses and knacker's yards as they think proper within their District; (b) that no place may be used or occupied as a slaughter-house which was not in such use or occupation prior to the passing of the Act of 1875, or the formation of the District into an Urban District, without first obtaining such license: (c) that slaughter-houses used prior to 1875 are required to be registered but not licensed; and (d) that the Urban Council may make bye-laws for the regulation of slaughter-houses.

The Reports from 38 Districts record that local slaughter-houses have been inspected, and that they are, with few exceptions, generally well kept. In the Borough of Crewe there are 15 registered slaughter-houses, which are used by 35 butchers. The premises, generally speaking, are kept in a satisfactory state. Some are kept excellently. During 1904 an application for a

license for premises in Wesley Street was refused, and a similar application was refused in 1905. In Dukinfield are ten slaughter-houses in actual use, duly inspected. They are kept clean and in sanitary condition, but some of them are deficient in air space and situated in objectionable places. The Medical Officer of Health for Hyde is in favour of a public abattoir being provided, where systematic inspection of meat could be carried out. There are 29 registered slaughter-houses in this Borough, which are kept properly—but the efficient inspection of meat in these is difficult. Additional powers have been obtained in regard to Slaughter-houses under the Hyde Corporation Act, 1903. In the Borough of Macclesfield are 22 registered slaughter-houses, and also four premises used for tripe-dressing, too large a number for proper oversight to be exercised. At several of these the floors, drainage, etc., are not satisfactory. Three were repaired during 1905. The Medical Officer of Health thinks a Municipal Abattoir would be of great benefit to the town. At Altrincham the new abattoir and lairages were completed in 1904. So that the District Council now have the regulation of the meat supply directly within their own control. At Higher Bebington a slaughter-house was built in 1903. There are now two in this District. At Hale and Hoole there appear to be no slaughter-houses. At Lower Bebington the 3 slaughter-houses have been regularly visited and occasionally the occupiers have needed admonition. The licenses are granted annually. The 3 licensed slaughter-houses are visited and kept clean, but only one has an impervious floor and glazed brick walls. Owners of two of these premises were required to amend defective floors in 1905. At Bollington are three slaughter-houses, all of which were duly inspected. They are clean and in good order. One of these, which used to drain into the brook has been properly drained. At Cheadle and Gatley there are 4 slaughter-houses, all still unlicensed. They are reported to be well-kept. At Hollingworth and Mottram the slaughter-houses are reported to be duly inspected. At Hoylake and West Kirby slaughter-houses (4) are inspected and action taken to remedy defects and insure periodical white-washing. At Ellesmere Port are 2 slaughter-houses regularly inspected. At Hazel Grove and Bramhall the 9 slaughter-houses are inspected and defects attended to. At Knutsford and at Lymm the slaughter-houses are periodically inspected, and have been found clean. At Marple the condition of the 5 unlicensed houses is not satisfactory; the buildings are structurally ill-adapted for the purpose and situated in objectionable places. The 14 slaughter-houses at Nantwich are well inspected and kept clean, but not one of them meets the requirements of the Local Government Board. The Medical Officer of Health would be pleased to see them replaced by a public abattoir. At Neston and Parkgate there are 3 licensed

houses regularly inspected. In the town of Northwich are 18 slaughter-houses duly inspected. Five butchers were ordered to deal more effectively with their offal. The slaughter-houses at Runcorn and Sale are reported to be regularly inspected. At Sandbach the slaughter-houses are not of the modern type, and yet with care in working and prompt removal of garbage, they have been kept in good order. Attention has been given to the two slaughter houses at Tarporley. At Wallasey all the slaughter-houses in connection with the butchers' shops were regularly visited, in addition to the regular inspection of the abattoir at the Foreign Animals Wharf. The Wilmslow slaughter-houses have been inspected and found to be in fairly satisfactory condition. one of them was pulled down during 1905 and a new one built.

In nine out of the 13 Rural Districts, it is stated that the slaughter-houses are inspected, and in four of these nine Districts they are held to be satisfactory. At Nantwich Rural District urban powers have now been obtained for the whole District. New bye-laws have been prepared by the Council, and these were approved by the Local Government Board in 1904. The good effect is already apparent. The Bucklow Rural District Council were not permitted by the Local Government Board to extend the bye-laws relating to slaughter-houses to the whole District. The three slaughter-houses at Malpas are neither licensed nor registered.

A large proportion of the premises in both Urban and Rural Districts might be much improved.

Offensive Trades.—A person establishing an offensive trade in an Urban Authority's District, without the Authority's consent in writing, is liable under the Public Health Act, 1875, to a penalty, and a further penalty for each day on which he carries on the trade. The trades mentioned in the Act are those of "blood-boiler, bone-boiler, fell monger, soap-boiler, tallow-melter, tripe boiler," or any other noxious or offensive trade or manufacture. When any of the preceding trades or any slaughter-house, or any place used for a trade process causing effluvia, is certified to an Urban Authority by the Medical Officer of Health, or any two medical practitioners, or any ten inhabitants, to be a nuisance, or injurious to the Health of any of the inhabitants of the District, complaints must be made before a Justice, and if it appears to the Court that the nuisance exists, and that the Defendant had not used the best practical means for abating such nuisance, he shall be liable to a penalty, and on repeated conviction to a higher penalty. The model Bye-laws of the Local Government Board include among offensive trades

those of blood-dryer, leather-dresscr, tanner, fat melter, glue maker, size maker, and gut scraper.

There is very little reference to offensive trades in the Reports. In six Reports it is expressly stated that "there are no offensive trades" in the District, and in Crewe there are only two small establishments where an offensive trade is carried on. The business (that of gut-scraping) is conducted without any cause of complaint. At Dukinfield are two premises on the outskirts of the Borough, whcre offensive trades are carried on. At Macclesfield the only offensive trades appear to be associated with the preparation of tripe, and the premises are well inspected. At Hyde are 4 establishments where tripe-boiling is carried on and one establishment where soap-boiling is carried on. At Mottram there is a knacker's yard, which is well inspected. At Wallasey the premises used for knackering and other offensive trades in the neighbourhood of Haverlock Street, Seacombe, have becn kept under supervision. The drain from the knackery was relaid in 1903, and a good grease-trap was provided.

Food Adulteration.—Mention is made in six Reports of action taken under thc Sale of Food and Drugs Acts, etc., by means of which adulteration is detected and punished.

From the Borough of Crcwe it is reported that 93 samples of various articles of food or drink were submitted for analysis. Of these 3 samples of butter and 5 of milk were found to be adulterated. Proceedings were taken in 5 cases. In one instance, £5 and 27/- costs was inflicted. In the Borough of Macclesfield 104 samples of food and drugs were submitted for analysis. One sample of milk was found to bc deficient in fat to the extent of 20 per cent. Thc vendor was proceeded against, and fined 10/- and costs. Two samples of butter were found to be adulterated and the vendor was fined £3 and costs. A sample of coffee was found to be adulterated with 70 per cent of chicory. In this case proceedings are pending. Two samples of milk were found to be slightly deficient in fat, and the vendors were warned not to offend again. The vendors of a poor quality of lead and white pepper were also warned. At Cheadle and Gatley it is noted that all the samples submitted for analysis were found pure.

At Wallasey there were 98 samples of food, etc., taken for analysis during 1905. Of these a sample of milk and a sample of coffee were found to bc adultcrated. Proceedings were taken against the vendors. The milk was certified to contain 2 per cent. of water, and the vendor was fined 20/- and 14/6 costs. The coffee was certified to contain 20 per cent. of chicory, and the vendor was fined 10/- and 14/6 costs.

The Aliens Act, 1905.—This appears to be the only Act of Parliament of interest to Medical Officers of Health, passed in 1905. Its object is to amend the law with regard to aliens. It is based mainly on the recommendations of the Royal Commission of 1902 on Alien Immigration, but some of the recommendations of that Commission, such as the one relating to overcrowding of certain areas by aliens, have not been dealt with in the new Act. The Bill of 1905, as introduced, differed considerably from the Aliens Bill which was before Parliament in 1904, some of the clauses and provisions which appeared in that Bill being omitted from the Bill of last Session. In the form in which the measure has received the Royal Assent the Act consists of ten sections, and, broadly, provides for the regulation of alien immigration into, and for the expulsion of undesirable aliens from, the United Kingdom.

Section 1 provides than an immigrant shall not be landed in the United Kingdom from an immigrant ship except at a port at which there is an immigration officer appointed under this Act, and shall not be landed at any such port without the leave of that officer given after an inspection of the immigrants made by him on the ship, or elsewhere. if the immigrants are conditionally disembarked for the purpose, in company with a medical inspector, such inspection to be made as soon as practicable, and the immigration officer shall withhold leave in the case of any immigrant who appears to him to be an undesirable immigrant within the meaning of this section.

Where leave to land is so withheld in the case of any immigrant, the master, owner, or agent of the ship, or the immigrant may appeal to the immigration board of the the port, and that board shall, if they are satisfied that leave to land should not be withheld under this Act, give leave to land, and leave so given shall operate as the leave of the immigration officer. For the purposes of this section an immigrant shall be considered an undesirable immigrant.

(a) if he cannot show that he has in his possession or is in a position to obtain the means of decently supporting himself and his dependants (if any) ; or

(b) if he is a lunatic or an idiot, or owing to any disease or infirmity appears likely to become a charge upon the rates, or otherwise a detriment to the public ; or

(c) if he has been sentenced in a foreign country with which there is an extradition treaty for a crime, not being an offence of a political character, which is, as

respects that country, an extradition crime within the meaning of the Extradition Act, 1870 ; or

(d) if an expulsion order under this Act has been made in his case ;

but, in the case of an immigrant who proves that he is seeking admission to this country solely to avoid prosecution or punishment on religious or political grounds or for an offence of a political character, or persecution, involving danger of imprisonment or danger to life or limb, on account of religious belief, leave to land shall not be refused on the ground merely of want of means, or the probability of his becoming a charge on the rates, nor shall leave to land be withheld in the case of an immigrant who shows to the satisfaction of the immigration officer or board concerned with the case that, having taken his ticket in the United Kingdom and embarked direct therefrom for some other country immediately after a period of residence in the United Kingdom of not less than six months, he has been refused admission in that country and returned direct therefrom to a port in the United Kingdom, and leave to land shall not be refused merely on the ground of want of means to any immigrant who satisfies the immigration officer or board concerned with the case that he was born in the United Kingdom, his father being a British subject.

The Secretary of State may, subject to such conditions as he thinks fit to impose, by order exempt any immigrant ships from the provisions of this section if he is satisfied that a proper system is being maintained for preventing the embarkation of undesirable immigrants on those ships, or if security is given to his satisfaction that undesirable immigrants will not be landed in the United Kingdom from those ships except for the purpose of transit. Any such order of exemption may be withdrawn at any time at the discretion of the Secretary of State.

Section 2 provides for the appointment of immigration boards for ports, such boards to consist of three persons summoned in accordance with rules made by the Secretary of State out of a list approved by him for the port, comprising fit persons having magisterial, business, or administrative experience. The Secretary of State is empowered to make rules generally with respect to immigration boards and their officers and the procedure under the Act.

Under Section 3 the Secretary of State may, if he thinks fit, make an expulson order requiring criminal or undersirable aliens in certain specified circumstances to leave the United Kingdom within a specified time, and thereafter to remain out of the United Kingdom.

Section 4 provides that where an expulsion order is made in the case of any alien the Secretary of State may, if he thinks fit, pay the whole or any part of the expenses of or incidental to the departure from the United Kingdom and maintenance until departure of the alien and his dependents. The section also provides for the masters of immigrant ships being liable in certain circumstances to refund to the Secretary of State his expenses in connection with expulsion cases, and to afford the expelled aliens free passage to the original port of embarkation. This may have the effect of leading masters of immigrant ships to exercise greater discrimination than they have done hitherto in many cases as regards the aliens brought by them to British ports.

Section 5 requires certain returns and particulars as to aliens to be furnished to the Secretary of State under penalty.

Section 6 provides for the appointment by the Secretary of State at such ports as he thinks fit of immigration officers and medical inspectors and officers, and for the remuneration of such officers.

Section 7 contains supplemental provisions as to the penalties for infringement of the Act, and as to procedure under the Act; and Section 8 contains definitions of "immigrant," "immigrant ship," "passenger," "steerage passenger," etc.

By Section 9 the Act is made applicable to Scotland and Ireland; and Section 10 provides that the Act shall come into operation on 1st January, 1906, and also repeals the Registration of Aliens Act, 1836—An Act which has practically become a dead letter.

It will be seen that this new Act is to be administered by the Home Office, but the Local Government Board, from the public Health point of view, is also concerned. As regards the protection of the country from the importation of infectious diseases by alien immigrants, the Port Sanitary Authorities and their officers already exercise strict supervision under the Local Government Board's Regulations as to cholera, plague, and yellow fever, and this supervision will not be interfered with by the new Act. No doubt the Port Medical Officers of Health will, as a rule, be selected as the medical inspectors to be appointed for the purposes of this Act, and in this way co-operation and efficient enforcement of the new Act will be facilitated. In October, 1905, the Home Secretary appointed a Committee to consider and report as to the rules and regulations which should be made to give effect to the Act, and to recommend the arrangements necessary for bringing

the Act into operation at the various Ports in the United Kingdom.

Recreation Grounds.—There is very little to be reported under this heading. The 10 acres of land purchased for a public park by the Dukinfield Urban District Council, in 1897, has been properly laid out, and was formally opened in 1902. At Crewe much more has been done in providing recreation grounds. Crewe has the Queen's Park, containing over 35 acres, situated in the South Ward, and the 3 playgrounds, viz.: the South Ward playground, area 11,501 square yards; West Ward playground, area 8,356 square yards. North Ward playground, area 16,429 square yards. In the opinion of the Medical Officer of Health, "The South and North Ward playgrounds require considerable alteration before they are likely to be much used by children. The provision of swings and other simple gymnastic appliances, and a smooth firm surface adapted to children's games would greatly enhance their value and popularity." At Hoole a piece of land 6¼ acres in extent was acquired in 1902 and laid out in 1903. However, it was not opened as a public recreation ground till May 7th, 1904. It has already been much used. At Hoylake and West Kirby attention is drawn to the extensive Parades constructed along the shore, which, with the Marine Lake, and the lighting of the District by electricity, have tended so much to increase the natural attractiveness of the place. Land at Hoylake, presented to the District Council by Lord Stanley of Alderley, for use as a recreation ground, has been laid out for cricket, football, etc. It is now in regular use. A pavilion has been built at a cost of £130, providing dressing rooms and sanitary conveniences.

Knutsford has always been fortunate in the possession of a large open space (about 50 acres in extent), known as the Heath. In addition to this the District Council has now acquired, by negotiation with Earl Egerton of Tatton, the southern end of the Moor (about 5 acres in extent), lying between the old town and the railway embankment. This has been levelled and fenced; trees and shrubs have been presented and planted In the water-logged area, excavation of one part and consolidation of another is effecting a great improvement. A contribution from the Freeholders' Fund will minimise the expenditure of the rates. The Medical Officer of Health expressses an opinion that, the scheme when completed, will be one of the greatest aesthetic improvements the District has ever known; and will be found of value from a sanitary point of view also.

The Recreation Ground was, at the close of 1905, prac-

tically completed, and will shortly be under the regulations of proper Bye-Laws.

Meteorological Results.—Six Medical Officers of Health furnish records on the meteorology of the year. It is remarkable that three of these records were taken at Bidston, Stalybridge and Crewe, representing the north-eastern and north-western extremities of the County, and a point in the south about equidistant from the other two points of observation. The fourth record (the entire rainfall only) is from Marple; and the fifth (the entire rainfall only) is from Dukinfield. The sixth is a very complete return from Hoylake and West Kirby, where, since 1901, meteorological observations have been noted in the Annual Report. The observations were taken at Hoylake—the mean barometer, mean temperature, total bright sunlight and total rainfall are recorded for each month in the year. According to the records given, the mean temperature was 48.9 degrees F. at Bidston (near Wallasey), and 49.4 degrees at Hoylake. The difference in the rainfall is remarkable. At each station of observation it was deficient. The total rainfall in 1905 was as follows:—

Borough of Crewe	37.7	inches.
Borough of Dukinfield	23.19	„
Borough of Stalybridge	30.80	„
Bidston (near Wallasey)	24.011	„
Wallasey (New Brighton)... ...	23.49	„
Hoylake	21.96	„
Marple	28.23	„

This list it will be noticed includes the total rainfall at New Brighton during 1905, as recorded by Dr. William Bell. The record of Dr. Bell has not been previously referred to in Annual Reports from Wallasey.

The total rainfall at each of these six stations in 1903 and 1904 are as follows:—

	1904.	1903.
Borough of Crewe ...	43.96 inches.	53.28 inches.
Borough of Dukinfield ...	27.63 „	35.20 „
Borough of Stalybridge ...	26.74 „	40.09 „
Bidston (near Wallasey) ...	2.5175 „	34.418 „
Hoylake	24.93 „	34.71 „
Marple	27.68 „	35.42 „

Inspection of Canal Boats.—Power is given under the Canal Boats Acts, 1877 and 1884, to Sanitary Authorities to cause inspections to be made of canal boats, and no canal boat can be used as a dwelling unless registered. The regulations for registration, fixing the number of persons allowed, promoting cleanliness, and preventing infectious disease in such boats are (as required) the Local Government Board's.

Judging by the Reports, there are 20 Districts in which the provisions of these Acts are in force—the Boroughs of Congleton, Dukinfield, Macclesfield, and Stalybridge; the Urban Districts of Altrincham, Lymm, Marple, Nantwich, Northwich, Sale, Sandbach, Wallasey, Winsford, and Yeardsley-cum-Whaley; and the Rural Districts of Bucklow, Congleton, Macclesfield, Nantwich, Northwich, and Runcorn. The number of boats inspected is not stated as regards Sandbach Urban District. The number of boats inspected varies from year to year, but is generally increasing. In some Districts the increased activity in the last seven years has been very marked. For example, in Wallasey 71 boats were inspected in 1896, 145 in 1897, 288 in 1898, 245 in 1899, 233 in 1900, 255 in 1901, 231 in 1902, 320 in 1903, 313 in 1904, and 331 in 1905.

Interments.—It has been stated in previous Reports that the various burial grounds in Cheadle and Gatley were almost full; that land had been purchased in 1901 for a Cemetery, and that laying out the ground had been in progress. In the Report for 1903, it was mentioned that this Cemetery was formally opened in April, 1903. The Church of England part was consecrated in June.

The completion of the Cemetery for Knutsford, at Tabley Hill, was noticed in the Report for 1901. It is situated about a mile from the town, and the site is a beautiful one. The grave-spaces number about 4,100.

Wilmslow Urban District Council having been informed by the Wilmslow Church Authorities that there is only space for a few more graves in the Churchyard, have communicated with the Alderley Edge Urban District Council, asking them to consider the advisability of making a Cemetery for the two Districts. As Alderley Edge has not sufficient accommodation in this respect, joint provision of a Cemetery will probably prove a suitable arrangement.

The Medical Officer of Health for Hazel Grove and Bramhall states that space in the Churchyard at St. Thomas's Church, Hazel Grove, the only one in the District, is becoming

limited for burials. Some provision for the near future must be made, and deserves the attention of the District Council.

The Cremation Act, 1902, is an Act of considerable importance from a public health point of view. It is for the regulation of the burning of human remains, and to enable Burial Authorities to establish crematoria.

The Act came into operation on April 1st, 1903, and does not apply to Ireland.

By Section 4, Burial Authorities are empowered to provide and maintain crematoria; but no human remains shall be burnt in any such crematorium, until the plans and site thereof have been approved by the Local Government Board, and the building has been certified by the Burial Authority to the Secretary of State to be complete, built in accordance with such plans, and properly equipped for the purpose of the disposal of human remains by burning.

Under Section 5, no crematorium shall be constructed nearer to any dwelling-house than 200 yards, except with the consent, in writing, of the owner, lessee, and occupier of such house, nor within 50 yards of any public highway, nor in the consecrated part of the burial-ground of any Burial Authority.

Section 6 empowers a Burial Authority to accept donations of land, money, or other property for the purpose of a crematorium.

Section 7 requires the Secretary of State to make regulations as to the maintenance and inspection of crematoria, and prescribes in what cases and under what conditions the burning of any human remains may take place, directing the disposition or interment of the ashes, and prescribing the forms of the notices, certificates, and declarations to be given or made before any such burning is permitted to take place.

Section 8 prescribes very heavy penalties for breaches of the regulations: and under Section 9 the Burial Authority may demand the payment of any such charges or fees for the burning of human remains in any crematorium provided by them, as may be authorised by any table approved by the Local Government Board.

Section 10 provides that nothing in this Act shall interfere with the jurisdiction of any Coroner under the Coroners' Act, 1887, or any Act amending the same, and nothing in this

Act shall authorise the Burial Authority, or any person, to create or permit a nuisance.

Under Section 11 the incumbent of any ecclesiastical parish is not obliged to perform a funeral service before, at, or after the cremation of any remains.

Section 12 provides for the fixing, with the approval of the Secretary of State, of fees in respect of burial services.

FRANCIS VACHER,

County Medical Officer of Health.

June 22nd, 1906.

Administrative County of Chester.

SUMMARY

OF

REPORTS

OF

District Medical Officers of Health,

FOR THE YEAR

1905.

SUMMARY OF REPORTS

OF

District Medical Officers of Health,

For the Year 1905.

CONGLETON

Municipal Borough.

Medical Officer of Health—Dr. P. M. Davidson.
Population at Census on April 1st, 1901, 10,707.
Estimated population in middle of 1905—10,707.
Area in acres—2572.
Birth-rate per 1000 living—23.1.
Death-rate per 1000 living—17.1.
Death-rate from seven principal Zymotic Diseases—1.3.
Deaths under 1 year to 1000 births—184.

The population of this Municipal Borough was 10,744 at the Census in 1891, and 10,707 at the Census in 1901. The decrease in the population during the decennium 1891—1901 was thus 37.

The cause of the diminution in the population is no doubt the decay of the staple trade of the town, and consequent lessened demand for labour resulting in people going to obtain employment elsewhere.

During 1905 the number of births registered in the Borough was 249, of which 12 were illegitimate, and the number of deaths registered in the Borough was 173. To these 173 must be added 11 deaths which took place in the Workhouse at Arclid, outside the Borough. Thus the deaths belonging to the Borough were 184. The birth-rate is 5.1 below the average in the Borough in the 10 years 1895—1904, and the death-rate is 1.1 below the average in the Borough in the same 10 years.

The number of deaths of infants was 44, being equal to 184 to each 1,000 births. In the 10 years 1895—1904 the deaths of infants were equal to 143 per 1,000 births.

Cases of Infectious Disease notified.—There were 88 cases of infectious disease notified in 1905, viz. :—1 small-pox, 13

diphtheria, 63 scarlet fever, 3 enteric fever, 2 puerperal fever, and 6 erysipelas. The only case which was isolated in Hospital was the case of small-pox.

Zymotic Mortality.—There were 15 deaths from zymotic disease, viz. :—11 measles, 1 scarlet fever, 1 whooping-cough, 1 enteric fever, 1 puerperal fever. There were also 3 deaths from epidemic influenza.

Small-pox.—In January a woman, aged 40, living in the outskirts of the town, and vaccinated in infancy, contracted small-pox. The eruption was discrete. The patient was promptly removed to the Small-pox Hospital at Arclid, where she made a good recovery. The source of infection could not be discovered. There were three inmates in the infected house, and 4 contacts, who had to be dealt with in the usual way. Fortunately, they all escaped infection.

Measles.—A very extensive and fatal epidemic of measles began in December, 1904, and continued throughout January, 1905, when it appeared to have ceased. Towards the end of March there was a recrudescence of the disease, and hundreds of cases occurred. The epidemic continued till the end of May. The type of the disease was more severe than had been observed for many years.

The Medical Officer of Health is of opinion that the 11 deaths certified as due to measles, does not represent the entire mortality from the disease in 1905. A considerable number of the 17 deaths ascribed to bronchitis and the 22 deaths ascribed to pneumonia were deaths of patients who had suffered from measles.

School Closure.—During the epidemic of measles all the schools were closed for a time, and one of them was closed twice, but this action does not appear to have influenced the cause of the outbreak in any way.

Diphtheria.—The 13 cases of this disease were of a mild type. Those who suffered were all children under 15 years of age. There was not a single instance of two cases in the same house, and, although the sanitary state of some of the houses was not very perfect, it could not be said to have caused the disease. No deaths occurred.

Scarlet Fever.—There were cases of scarlet fever in each quarter, but of the 63 in the year, about 50 occurred in the last quarter. The disease was generally of the mildest type, often so mild that the children were never really ill, and the disease was not recognised till desquamation began. The patient who died had malignant scarlet fever.

Congleton Municipal Borough.

Enteric Fever.—As regards two of the cases of enteric fever, the sanitary state of the premises was very bad. as regards the remaining case, the premises were in order, and there was nothing to account for the occurrence of the disease. The water supply to all the 3 houses was good.

Puerperal Fever.—One of the cases of puerperal fever (which was fatal) occurred in a very filthy house where an old woman with a bad leg lived in the same room with the patient. There was not, therefore, anything remarkable in its occurrence. The other case did well, and nothing was discovered to account for it.

Diarrhœa.—There were a few cases of Autumn diarrhœa in September, but no deaths, and for some years now, compared with an earlier period, the freedom from fatal cases of this disease has been remarkable.

Influenza.—In the first quarter of the year there was a severe outbreak of influenza, with three deaths directly attributed to it. Some of the deaths certified as pneumonia may have been in the first instance due to influenza.

Phthisis and other forms of Tubercular Disease.—Five deaths were registered as due to phthisis, and 8 to other forms of tubercular disease. The mortality from phthisis (0.4 per 1000 living) compares favourably with the mortality from this disease (0.2 per 1000 living in 1904).

Action taken to prevent the Spread of Infection.—All the houses in which infectious disease occurred were thoroughly disinfected, and the patients isolated as far as possible. As regards small-pox, isolation could be promptly effected, but, as to other cases of infectious disease, isolation could not be effectively carried out in the absence of an Isolation Hospital.

Proposed Hospital Accommodation.—The need of accommodation for treating and isolating cases other than small-pox is now in a fair way of being supplied within a reasonable time. The neighbouring Authorities have agreed to combine with the Borough Authority and provide a Joint Hospital.

Small-pox Hospital.—Accommodation for small-pox cases is supplied by the enlarged and improved Hospital at Arclid, which is available for the Borough and other Districts within Congleton Union.

Arrangements for Bacteriological Examinations.—In view of the difficulty sometimes experienced of making certain

of the nature of suspected cases of typhoid fever and diphtheria, the Corporation have made arrangements for bacteriological examinations to be made by Professor Delépine, of the Victoria University of Manchester, at a comparatively small cost. The Medical Officer of Health has the necessary apparatus for the collection and transmission of specimens, and will be pleased to hear from practitioners who may wish to have examinations made.

Antitoxin.—Arrangements have been made for the free supply of diphtheria antitoxin, for the use of patients too poor to provide it for themselves.

Factory & Workshop Act. — Under this Act 99 inspections were made in 1905, viz:—12 of factories, 86 of workshops or workplaces, and 1 of home workers' premises. Notices for the removal of defects were served in 5 instances, and these were complied with in due course. All the premises inspected were in fairly satisfactory condition, including the bakehouses. There are no underground bakehouses in the Borough.

Water Supply has been fairly satisfactory as regards quantity and quality in 1905.

Sewerage and Outfall Works.—These have made good progress during the year. When the Works were last inspected by the County Medical Officer in December, 1905, the eight large septic tanks and two detritus tanks were all in use, and working satisfactorily. The secondary treatment of sewage has been arranged for by eight bacteria beds, planned to work on the so-called "continuous intermittent system" In plan all these beds are circular with concrete floors. The size of the first four constructed is 60 feet in diameter at the bottom, and 54 feet in diameter at the top; the size of the remaining four beds is $61\frac{1}{2}$ feet in diameter at the bottom, and $55\frac{1}{2}$ feet in diameter at the top, the depth of each bed is 5 feet throughout. The first four beds have each a two-arm revolving sprinkler, but as the wind was found to affect these somewhat, the second four beds are arranged for four arm revolving sprinklers.

On the day of inspection seven of these beds were completed and the last one nearly completed, while six were actually in work. The large roughing filter, referred to in previous Reports, is not quite completed, but was seen in operation, and doing its work well. All the sewage which used to be treated at the Dane Street Experimental Works, is brought to these works. All the sewage of the District appears to be now effectively dealt with. The effluent discharged into the river has a good appearance. According to recent samples analysed, the amount

of purification obtained by the primary treatment is satisfactory, 70 per cent. of the impurities being removed. The effluent as discharged into the river has 95.8 of the impurities removed. The whole operations are carried on without the production of any noticeable effluvium nuisance.

Inspection.—The Medical Officer of Health has visited and inspected the whole District in the course of the year, and many parts of it several times. The Sanitary Inspector is almost daily occupied in some form of sanitary inspection.

Dairies, &c.—Regulations, under the Dairies, Cowsheds, and Milkshops Order, were made by the Corporation on May 15th, 1900, and came into force on June 24th. Several inspections have since been made, disclosing in some instances defects, which the Authority have endeavoured to remove.

Removing and Deodorizing Excreta.—The method of treating night-soil with acidulated peat-dust, begun in 1893, continues to give satisfaction. During the year 56 of the old privy-closets were converted into pail-closets, making the number of pail-closets in use at the end of the year 1,674. The number of loads of night-soil removed was 3,810. There were 458 tons of peat-manure sold.

Report of the Surveyor and Inspector.—According to the Report of Mr. Burslam, a considerable amount of sanitary work has been done during the year. All the houses at which cases of infectious disease had been reported were duly disinfected. There were 410 sanitary inspections of houses, besides those incidental to the occurrence of infectious disease.

In all 108 notices were served for the abatement of nuisances complained of, or discovered.

During the year 17 houses were newly supplied with town's water, reducing the number unsupplied to 85 houses. Three samples of town's water, and 36 of food and drugs, were analysed.

Thirty-five houses were re-drained during the year and five streets were re-sewered.

Canal Boats.—Thirteen Canal Boats were inspected during 1905, and no reports appear to have been made of any infringement of the Canal Boats Act, or Regulations, made thereunder.

CREWE

Municipal Borough.

Medical Officer of Health—Dr. A. J. Laird.
Population at Census on April 1st, 1901—42,074.
Estimated Population in middle of 1905—46,578.
Area in acres—2,185.
Birth-rate per 1,000 living—28.2.
Death-rate per 1,000 living—13.5.
Death-rate from seven principal Zymotic Diseases—
Deaths under one year to 1,000 births—129.

The population of this Municipal Borough was 42,074 at the Census in 1901, and the population of the Corresponding area was 32,774 at the Census in 1891. The increase in the population during the decennium 1891-1901 was thus 9,300; that is, 28.37 per cent.

The estimate of the population made for the middle of 1905 is based upon the number of inhabited houses as obtained from the rate-books, less the number of empty houses, and the resultant multiplied by the average number of persons per house as obtained from the last census.

Houses on Rate Books, September 30th, 1905 ...	10,179
Empty Houses, Midsummer, 1905	455
Total occupied houses	9,724
Persons per house (Census 1901)	4.79
Population Midsummer, 1905	46,578

This differs from the method used by the Registrar-General who estimates the population upon the assumption that the same annual rate of increase will be maintained from 1901 to the next census at 1911, as existed in the period 1891 to 1901.

Both methods are subject to error, which increases with the length of time from the last census. In the method used in these reports, the factor for multiplication (the average number per house) varies *e.g.*, at the 1891 census it was 5.911, while at the last census in 1901 it had diminished to 4.79; but on the whole it is probably best suited to places of the size of Crewe, more especially when the population is liable to great fluctuation as the result of the condition of the labour market.

It is extremely probable that the method used has given a lower estimate of the population than is actually the case, for the reason that the proportionate increase in the number

of occupied houses is less than before; while there is good reason to believe that the average number of persons per house has increased owing to depression of trade in the town, and the fact that in many instances two families have united and now occupy one house. This is confirmed also by the information regarding empty houses supplied by the Assistant Overseer. The percentage of these is higher than in any year since 1894, the first year for which the returns are given.

The Borough is divided into four wards. The population of the wards estimated for the middle of 1905 is as follows:—

Central Ward...	10,350
West Ward	10,478
North Ward	11,246
South Ward	14,504

Geology of Crewe and Neighbourhood.—The soil upon which Crewe and the neighbouring villages are built consists wholly of drift-deposits. The whole of the Borough is built upon a redeposited boulder clay (red, blue, and yellow brick clays) intersected here and there with irregular lines and pockets of sand and gravel; probably the remains of old river and brook courses.

This clay deposit, and an underlying bed of stratified clay, lie in a hollow of stratified drift-sand, and attain a depth of from 12 to 100 feet.

The drift-sand rises to the surface in a bay-like curve in the outlying villages of Wistaston, Shavington, Weston, Crewe Green, and Haslington.

The whole of the deposits seem to be laid in a deep hollow in the Keuper; a brook which passes through the centre of the Borough, and appears to have cut down to this formation.

Elevation.—The Borough is situated upon the Valley Brook, a tributory of the River Weaver. The mean elevation is about 170 feet above sea level, and varies from 113 feet at the lowest part of the sewage farm to 200 feet at Hightown.

Height Above Sea Level.

Sewage Farm (west of Queen's Park) ...	113 feet
The Valley	145 ,,
Market Square (south-west corner)	184 ,,
Isolation Hospital	182 ,,
Nantwich Road (east end)	188 ,,
Hightown (St. Paul's Church—north side) ...	200 ,,

Crewe Municipal Borough.

Area.—The Borough has an area of 2,185 acres, and comprises the Civil Parish of Monks Coppenhall, and parts of the Civil Parishes of Church Coppenhall, Shavington-cum-Gresty, and Wistaston, the three last-named parts being added on 24th March, 1894, by Order of the Local Government Board.

New Houses.—The number of plans passed for new houses in 1905 was 89. The number of such plans passed in 1904 was 157. The number of plans passed in 1903 was 225. The number of plans passed in 1902 was 400, the number passed in 1901 was 243, the number passed in 1900 was 201, the number passed in 1899 was 385, the number passed in 1898 was 308, the number passed in 1897 was 441, the number passed in 1896 was 317, the number passed in 1895 was 283, and the number passed in 1894 was 238.

The number of "habitation" certificates granted in 1904 was 181, and in 1905 the number granted was 135.

Houses and Rateable Value.—As showing the small rateable value of a large portion of the houses in Crewe, the following statement is interesting. It refers to the houses on the Rate-books on September 30th, 1905.

Houses rated under	...	...	£5	per annum	...	...	172
,,	,, at	£5	and under	£10	,,	,,	...	...	7,089
,,	,,	£10	,,	£20	,,	,,	...	...	2,439
,,	,,	£20	,,	£30	,,	,,	...	...	260
,,	,,	£30	,,	£40	,,	,,	...	...	94
,,	,,	£40	,,	£50	,,	,,	..	...	42
,,	,,	£50	,,	£60	,,	,,	...	...	17
,,	,,	£60	,,	£70	,,	,,	...	...	16
,,	,,	£70	,,	£80	,,	,,	...	...	5
,,	,,	£80	,,	£90	,,	,,	...	...	8
,,	,,	£90	,,	£100	,,	,,	...	...	6
,,	,,	£100	,,	£200	,,	,,	...	...	25
,,	,, above	£200	,,		,,	,,	...	...	6
				Total	...	...	...		10,179

From the above it will be seen that over 72 per cent. of the houses in Crewe are rated at under £10 per annum, and that over 95 per cent. are rated at under £20 per annum.

Marriages.—During 1905, there were solemnized 261, corresponding to a marriage-rate of 11.2 per 1,000 of the population. The marriages and marriage-rates in Crewe during the eight years, 1897-1904, are given below. The marriage-rates in England and Wales are added for purposes of comparison:—

Crewe Municipal Borough.

Year.	No. of Marriages.	Marriage-rate.	Marriage-rate in England and Wales.
1897	244	12·64	16·0
1898	272	13·76	16·2
1899	315	15·56	16·5
1900	304	14·68	16·0
1901	250	11·80	15·9
1902	310	14·32	15·9
1903	297	13·05	15·6
1904	242	10·50	15·2

Births and Deaths.—In 1905, the number of Births registered was 1,318, of which 39 (2.9 per cent.) were illegitimate. The birth-rate is 2.2 lower than the Crewe birth-rate in 1904, and 4.6 lower than the Crewe birth-rate averaged in 1895-1904. In 1905 the number of deaths registered (including 34 deaths of persons belonging to the Borough, which took place in Nantwich Workhouse, etc., and excluding seven deaths of persons not belonging to the Borough) was 629. The death-rate is 1.1 below the exceptionally low death-rate recorded in Crewe in 1904, and 2.4 below the average death-rate in Crewe in 1895-1904.

The following table showing the number of deaths and death-rate during each month in 1905, indicates that the very low death-rate is due to a reduction of mortality in the last six months of the year :—

Month.	Total No. of deaths.	Death rate.
January	77	19.8
February	65	16.7
March	48	12.3
April	54	13.9
May	53	13.9
June	56	14.4
July	43	11.0
August	40	10.3
September	46	11.8
October	54	13.9
November	51	13.1
December	42	10.8
Whole Year	629	13.5

Deaths of Illegitimate Children.—Ten of the deaths recorded in 1905, were of illegitimate children. Particulars of these are as follows:—

Age.	Sex.	Cause of Death.
3 years	F.	Gastritis; Exhaustion.
10 „	F.	Tubercular Meningitis.
3 months	F.	Syncope following acute bronchitis accelerated by want of medical attention.
7 „	M.	Convulsions due to improper feeding.
3 „	F.	General Debility, General Oedema.
7 „	M.	Meningitis, Convulsions.
26 days	M.	Mal-nutrition: Exhaustion.
3 months	M.	Bronchitis.
4 „	M.	Convulsions.
2 days	M.	Premature birth, Debility.

The following comparison of death-rates per 1,000 births, among legitimate and illegitimate children, in 1897-1905, seems to indicate that, except in 1905, illegitimate children had as good a chance of surviving as legitimate children:—

	1897	1898	1899	1900	1901	1902	1903	1904	1905
Infantile death-rate of legitimate children	144	166	162	138	180	130	147	159	131
Infantile death-rate of illegitimate children	172	255	228	125	200	156	71	162	256

Still-births.—During 1905, the bodies of 56 still-born infants were brought to the Cemetery for burial. The still-births were therefore equal to 4.2 per cent. of the births registered. The number thus brought for burial in the 15 years, 1890-1904, averaged 4.4 per cent. of the births registered.

Infant Mortality.—Of the 629 Deaths, 173 were of infants under a year old. This number is equal to 131 per 1,000 births. During the ten years, 1895-1904, the proportion of deaths of infants to each 1,000 born, was 153, in Crewe. The infantile death-rate in Crewe varied considerably in different months, being equal to 223 in April, and 175 in November, whilst it was 78 in August, and 98 in December. The reduction in the general death-rate in Crewe in 1905, was almost wholly amongst infants. The cause of the diminution in infant mortality is the small number of deaths from epidemic diarrhœa. It has been pointed out in previous Annual

Crewe Municipal Borough.

Reports, that the principal causes of high infant mortality are, apparently, so far as Crewe is concerned:—

1. Ignorance on the part of mothers as to proper methods of infant feeding and management.
2. Insanitary condition of the home and its environment, *e.g.*, dirty houses, unpaved yards, proximity of privy middens, etc.

Employment of married women in factories with its resulting early weaning and hand-feeding is not an element in the production of a high infant mortality of any importance in Crewe.

Uncertified Deaths.—There were only 3 deaths registered in 1905, the causes of which were not certified by a medical practitioner, or by the Coroner, after inquest. The proportion of uncertified deaths to the whole number registered for 1893-1905, is given in the following tabular form:—

Year	Uncertified deaths.	Percentage of total deaths.
1893	8	1.1
1894	8	1.5
1895	6	0.98
1896	4	0.7
1897	3	0.4
1898	3	0.4
1899	8	1.1
1900	10	1.4
1901	11	1.5
1902	3	0.4
1903	6	0.9
1904	3	0.4
1905	3	0.4

Zymotic Diseases.—The number of cases of zymotic diseases which came to the knowledge of the Medical Officer of Health, during the year 1905, was 245, viz.:—42 diphtheria, 5 membranous croup, 147 scarlet fever, 10 enteric fever, 10 puerperal fever, and 31 erysipelas. The number of deaths from the seven principal zymotic diseases was 78, viz.:—22 measles, 4 diphtheria, 4 scarlet fever, 28 whooping-cough, 4 enteric fever, and 16 diarrhœa. There were also 10 deaths from epidemic influenza, 5 from puerperal fever, and 3 deaths from erysipelas, or other septic disease. The death-rate from the seven principal zymotic diseases in Crewe, was equal to 1.6 per 1,000 living, in 1905. This is the same as in 1904, and is not very high for a town.

The cases of infectious diseases notified, month by month, in 1905, were as follows:—

Crewe Municipal Borough.

1905.	Small-pox.	Diphtheria and Membran'us Croup.	Scarlet Fever.	Enteric Fever.	Erysipelas	Puerperal fever.	Totals.
January	...	6	24	1	2	1	34
February	...	6	26	...	2	3	37
March	...	9	16	...	1	3	29
April	...	5	11	1	3	1	21
May	...	4	16	2	1	...	23
June	...	...	16	...	1	...	17
July	...	2	7	1	4	...	14
August	...	2	4	...	4	...	10
September	...	3	10	4	5	1	23
October	...	2	5	...	2	...	9
November	...	5	9	1	2	...	17
December	...	3	3	...	4	1	11
Totals	...	47	147	10	31	10	245

Vaccination.—The following return is submitted through the courtesy of the Registrar of Births and Deaths, respecting the vaccination of children whose births were registered in the Borough, in the eight years, 1898-1905:—

Year.	1898	1899	1900	1901	1902	1903	1904	1905
Births registered	1365	1400	1420	1311	1412	1454	1436	1318
Successfully vaccinated	913	945	990	900	1016	1060	1050	1014
Certificates of insusceptibility	1	3	5	6	3	2	5	3
Certificates of exemption (Conscience Clause)	35	66	40	33	22	33	21	44
Had small-pox	...	...	...	...	...	...	...	...
Died Unvaccinated	159	155	133	143	128	140	133	101
Postponed by medical certificate ...	75	61	43	24	33	43	35	30
Removal to other districts	52	44	59	49	51	56	50	49
In abeyance	130	126	150	156	159	120	142	77
Percentage successfully vaccinated ...	66	67	69	68	71	72	73	77
Percentage successfully vaccinated, excluding those who died unvaccinated	75	75	76	77	79	75	80	83

Crewe Municipal Borough.

Disinfection.—During 1905, there were in all 276 houses disinfected, viz. :—

After notification of infectious diseases ...	223	houses.
After deaths from measles	19	„
„ „ phthisis	17	„
„ „ whooping-cough ...	14	„
„ „ influenza	3	„

There were also eight schools disinfected during the year.

The bedding and clothing from these houses, as well as seventy-eight sets of bedding from the Cottage Hospital, were removed to the Isolation Hospital, and disinfected by passing through the Washington Lyon disinfector.

The following quantities of disinfectants were used during the year :—

2 tons of Carbolic Powder (15 per cent.) used chiefly for nightsoil purposes.

½-ton of Izal Powder, used chiefly for distribution to householders.

10 gallons of Izal Fluid, used in houses where cases of infectious disease occurred.

50 lbs. of Formalin Tablets for room disinfection.

Bacteriological Examinations.—The following Table shews the number of examinations made during the year by arrangement with Prof. Delépine, of the Victoria University of Manchester :—

Nature of Specimen.	Negative.	Positive.	Totals.
Typhoid Fever, Blood Serum	7	6	13
Diphtheria, Throat Swabs ...	11	9	20
Phthisis, Sputa	17	19	36
Totals	35	34	69

Measles caused 22 deaths in 1905, being 0.47 per 1,000 living. The outbreak of Measles, which commenced in the autumn of 1904, continued during the early months of 1905. It then disappeared almost completely, the last cases being reported

early in June. The epidemic might therefore be divided into two periods, the first during the latter half of 1904, with 13 deaths, and the second part occupying the first half of 1905, when 22 deaths occurred. Several schools were closed on account of measles, and efforts were made to prevent the spread of the disease to others by means of transference of scholars from one school to another. Notice of closure of each school was sent to teachers, both of day and Sunday schools, with a request that scholars from the infected school should be excluded from attendance.

There were 588 certificates granted for the exclusion of children from school on account of Measles, as compared with 1,549 in 1904. The average annual number of deaths from Measles since 1874 was 11.

Whooping-Cough caused 28 deaths in 1905, being 0.6 per 1,000 living. There were 170 certificates granted for the exclusion of children from school on account of whooping-cough, as compared with 189 in 1894. The average annual number of deaths from whooping-cough since 1874 was 11.

Diphtheria (including under this term membranous croup) was the cause of four deaths in 1905. As 47 cases were notified, 8.5 per cent. of the known cases were fatal. There were 27 of the cases removed to Hospital. The number of cases and deaths in the eight years, 1897-1904, is as follows:—

Year ...	1897	1898.	1899.	1900.	1901.	1902.	1903.	1904.
Cases ...	66	40	46	36	112	136	150	53
Deaths ...	11	3	14	4	16	28	18	3
Fatality %	16.6	7.5	30.4	11.1	14.2	20.5	12.0	5.6

Almost one-half of the cases were from the South Ward, the distribution being:— South Ward 21, West Ward 13, North Ward 7, and Central Ward 6.

At no time during the year did the disease show any tendency to become epidemic.

The average annual number of deaths from diphtheria and membranous croup since 1874 was 7.

Scarlet Fever.—During 1905, there were 147 cases notified, of which 4 proved fatal, that is 2.7 per cent. The number of cases removed to Hospital was 120—81 per cent. The number of cases and deaths in the eight years, 1897-1904, is as follows:—

Year ...	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.
Cases ...	201	57	50	211	160	96	212	351
Deaths ...	7	3	1	8	6	3	9	11
Fatality °/₀	3.4	5.2	2.0	3.7	3.7	3.1	4.2	3.1

Crewe Municipal Borough.

The number of cases notified was 204 less than in 1904, and is just slightly under the average annual number. The fatality rate is also low. Enquiries made into each case as it arose showed that the disease was spread entirely by means of personal contact either at home, or more commonly at school. Two-thirds of the cases occurred during the first half of the year, and school closure for the annual holidays seemed to determine the practical disappearance of the disease for a time, the number of cases notified from July onward being only 38, as against 109 in the first six months of the year.

The average annual number of deaths from scarlet fever since 1874 was 11.

Enteric Fever.—During 1905, there were 10 cases notified, of which 4 proved fatal—40 per cent. Nine cases were removed to Hospital. The number of cases and deaths in the eight years, 1897-1904, is as follows:—

Year ...	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.
Cases	28	32	30	22	15	17	11	2
Deaths ...	3	7	4	10	3	2	4	1
Fatality °/₀	10.7	21.8	13.3	45.4	20.0	11.7	36.4	50

Three of the cases notified in 1905 were imported from other districts, the patients returning to their homes in Crewe owing to their illness. The others were sporadic cases, two or three of which proved on continued observation to be suffering from some other disease. The seasonal distribution was—January 1 case, April 1 case, May 2 cases, July 1 case, August 1 case, September 3 cases, and November 1 case.

The average annual number of deaths from enteric fever since 1874 was 6.

Diarrhœa was the cause of 16 deaths in 1905. Of those who died 12 were infants under a year old. There were also 11 deaths ascribed to enteritis. Of those who died 8 were infants under a year old. The average number of deaths from diarrhœa only since 1874 was 26. The record for 1905 is thus fairly low.

The influence of season on the prevalence of diarrhœal diseases is very marked; they are hot weather diseases, and prevail in epidemic form in summer and autumn, when the temperature of the soil reaches and is maintained at a high level. Twenty of the deaths occurred between the months of June and October, 14 of them being in August, September and October.

Investigations have been made into the circumstances attending each of these deaths, in the case of infants, with special reference to the feeding. Only one of the infants was entirely breast fed; 4 were fed at the breast for periods varying from

a few days to six months, and then upon the bottle; one was fed throughout, partly at the breast, and partly with "sops"; the remainder were brought up entirely upon the bottle. In only one case was the boat-shaped bottle in use, the others had the rubber tube bottle.

The sanitary surroundings and general cleanliness of the house, and the nature of the sanitary conveniences in use were also noted. These enquiries have been going on for several years now, and the statement below is based upon enquiries made into these special points in connection with the deaths of 118 infants.

Nature of sanitary convenience.	Total number of houses of each class (1905).	Number of deaths in each class.	Proportion per cent. of deaths in each class.
WATER CARRIAGE SYSTEM—			
Clean water closet ...	5,180	32	0.61
Slop water closet ...	1,010	12	1.18
	6,190	44	0.71
DRY CONSERVANCY—			
Pail	3,182	46	1.44
Mixed	1,245	25	2.009
Cesspool	22	3	13.63
	4,449	74	1.66

This examination shews very clearly the enormous difference between the clean water closet and the other methods of sewage disposal. Every method of dry conservancy, which means the storage, in fairly close proximity to dwelling houses, of excreta, for periods varying according to the size of the receptacle, compares most unfavourably with the water carriage system. The work of abolishing the old system of mixens and cesspools has been progressing steadily for years. Unfortunately, however, the scarcely less offensive, and scarcely less insanitary pail closets shew a tendency to increase. There is probably little objection to these in purely rural districts, but in towns their multiplication is to be deprecated.

Erysipelas.—There were 31 cases notified, of which one proved fatal—3.2 per cent. The cases and deaths during the eight years 1897-1904, were as follows :—

Year ...	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.
Cases ...	115	49	62	44	40	40	40	52
Deaths ...	9	3	2	0	3	4	7	5
Fatality per cent.	7	6	3	0	7.5	10	17	9.6

Crewe Municipal Borough.

Puerperal Fever.—There were 10 cases notified and 5 deaths. The cases and deaths during the eight years 1897-1904, were as follows :—

Year ...	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.
Cases ...	7	4	10	7	1	4	6	1
Deaths ...	3	2	7	5	0	2	2	3
Fatality per cent	42	50	70	71	0	50	33	?

The stricter supervision now exercised over the practise of midwives has resulted in an increase in the number of cases notified. It was for this reason that the Health Committee decided whenever the accommodation was available to admit cases of puerperal fever to the Isolation Hospital. Three cases were admitted during the year, all of whom recovered.

Phthisis and other forms of Tuberculosis.—During 1905, there were 24 deaths registered as due to phthisis, and 44 deaths registered as due to other forms of tuberculosis. Thus the phthisis death-rate was equal to 0.5 per 1,000 living, and the death-rate from all forms of tubercular disease was equal to 1.4 per 1,000 living. Of the 24 who died from phthisis, 19 were males and only 5 females. These figures are much too small to admit of any general conclusions being drawn, but in Manchester, where a special enquiry has been prosecuted into the phthisis mortality for a number of years, much valuable information on this subject has been obtained. The results of these enquiries point to personal infection while at work as the principal source of infection. This would account for the greater incidence of the disease among the male population, along with other known contributing factors of a character likely to depress vitality and affecting mostly men, such as exposure, intemperance, poverty, etc.

An examination of the registrar's returns for the last 6 years shews that there were 17 houses in the town in which more than one death from tubercular disease had occurred.

The occurrence of secondary cases of tubercular disease in a house raises two questions :—Is it purely a case of personal infection, *i.e.*, direct transmission? or is the sanitary condition of the dwelling such that the bacillus finds outside the human body conditions which favour its existence and development?

In 13 instances the second case was a relative, and in 4 the house was occupied by an entirely different family. That the majority of cases arise from close association with a person suffering from the disease is shewn by the Manchester enquiries, where, out of a total of 601 cases, it was shewn that 407 had acquired the disease in this way. The infection is conveyed chiefly by means of the sputum, and the habit of spitting is to be condemned for this reason if for no other.

A bacteriological examination of the spit was made in 36 cases, and in 19 the tubercle bacillus was found. After every death from tubercular disease the health department offers to carry out disinfection of the premises, bedding and clothing, and in 17 instances this was done.

The average annual number of deaths from phthisis, since 1874, was 30.

The number of deaths which have occurred from tubercular disease, other than phthisis, since 1893, is as follows:—

	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905
Tubercular Meningitis...	7	9	6	4	7	13	6	9	23	7	10	12	12
Tubercular Peritonitis & Tabes Mesenterica ...	25	18	19	7	14	23	15	12	18	13	18	20	16
Other forms of Tuberculosis ...	...	5	6	2	2	5	6	18	7	14	7	13	16
	32	32	31	13	23	41	27	39	48	34	35	45	44

Influenza was the registered cause of 10 deaths in 1905, being equal to a death-rate of 0.2 per 1000 living. In 1904 there were 7 deaths from influenza.

Method of dealing with Infectious Disease.—Each case when reported is at once visited, and enquiries are made as to the possible sources of infection, the means of isolation adopted and available, the practicability of adequate nursing and bathing arrangements, etc. Where good arrangements cannot be made at home, removal to hospital is advised. Disinfectants are supplied to the house. If the case is not removed, a form is left for signature to be sent in when the patient has recovered, and disinfection may be carried out. Notice is also given to the parents requiring them to keep their other children away from school, and communications are sent to Head Teachers, while the

librarian at the Free Library receives a weekly list of infectious houses.

On the admission of each child to Hospital, its name and other particulars are entered in a case book by the Medical Officer, who also, in the case of scarlet fever, sends a notice to the parents, saying that the Corporation will not be liable for future infection which may occur at home after the child's discharge, but that all due care will be exercised whilst the child is in Hospital. After the ambulance attendant has taken a case to the Hospital, he again visits the house, disinfects the infected room, and removes all the infected bedding, etc., to the steam disinfector. When disinfection is completed he again conveys the bedding, etc., to the house.

The Isolation Hospital, it may be remembered, was opened on October 16th, 1897. The site on which it is built is five acres in extent, situated to the north of Middlewich Street, in an elevated position with the open country around. The Hospital, including £750 for site, cost approximately £9,500. All suitable patients resident within the Borough are removed and maintained, and their belongings disinfected at the cost of the Corporation. Charges are made for patients living outside the Borough. The premises were originally lighted by gas, but since September, 1901, electric light has been supplied by the Corporation.

There are 16 beds in the scarlet fever pavilion, 10 beds in the enteric fever pavilion, and 2 beds in the observation block.

Owing to the rapid increase in the population, and the increasing number of patients treated, it was found necessary to enlarge the Hospital by the addition of a two ward pavilion for diphtheria, together with extra housing accommodation for the nursing staff. The additions were commenced at the beginning of 1903, and on March 30th, 1904, the opening ceremony was performed by the Mayoress of Crewe. The plans for the extension were prepared by Mr. G. Bolshaw, of Southport, who was the architect of the Hospital opened in 1897. The new pavilion and additions to the housing accommodation for the staff was £3,066.

The staff of the Hospital consists of a Matron, 8 nurses, (2 charge, 4 assistant, and 2 probationer nurses), and 6 maids (cook, housemaid, scullery maid, 2 ward maids, and laundry maid). There is a non-resident ambulance attendant who also acts as disinfector for the Health Department, and a gardener. Occasional extra assistance has to be obtained in the laundry and grounds.

Crewe Municipal Borough.

The following statement shows the number of cases dealt with in 1905 :—

	Scarlet Fever.	Diphtheria and Memb. Croup.	Typhoid Fever.	Puerperal Fever.	Whooping Cough.
Remaining in Hospital at end of 1904 ...	28	—	—	—	—
*Admitted during 1905	120	27	9	3	1
Total ...	148	27	9	3	1
Discharged cured during 1905	136	25	4	2	1
Died during 1905 ...	4	2	5	—	—
Remaining in Hospital at end of 1905 ...	8	—	—	1	—

In addition to the disinfection of bedding and clothing taken from infected houses or from the Hospital Wards, a considerable amount of work has been done for the Cottage Hospital in disinfecting bedding which has become infected with septic discharges.

The following shews the annual number of patients admitted to the Hospital since its opening, and the percentage of cases of Scarlet Fever removed to Hospital :—

	Total Number of Cases admitted.	Percentage of Scarlet Fever cases removed.
1897 (from October) ...	26	—
1898	68	64%
1899	73	76%
1900	158	65%
1901	129	69%
1902	102	74.5%
1903	169	76%
1904	298	81%
1905	160	81%

The cost of the maintenance of the Hospital for the year ending December 31st, 1905, is stated as hereunder :

*In addition, 2 cases of Scarlet Fever and 1 of Enteric Fever were admitted from outside districts, and one suspected case of Enteric Fever was admitted for observation.

Crewe Municipal Borough.

	£	s.	d.	£	s.	d.
Salaries of Matron, Nurse, etc. ...				353	5	4
Porters' Wages (proportion) ...				47	5	4
Nurses' Uniform				16	0	2
Maintenance of Patients and Staff:—						
Groceries	190	11	9			
Butchers' Meat	133	13	0			
Fish, Ice, etc.	26	1	6			
Vegetables	17	9	3			
Milk	84	18	9			
Bread	36	4	11			
				488	19	2
Druggists' Sundries				38	19	7
Drapery, Crockery, Hardware, Cleaning Materials, etc. ...				73	8	1
Repairs to Vans, Laundry Fittings, etc.				38	9	6
Maintenance of buildings... ...				36	16	7
Gas				14	14	6
Electricity				61	3	5
Water				19	15	6
Rates and Taxes				24	13	2
Insurance				7	9	3
Telephone Charges				7	17	8
Fuel				137	2	10
Cultivation of Grounds				81	14	5
Horse Hire for Ambulance, etc. ...				80	9	0
Rent of Small-pox Hospital ...				20	0	0
Interest on cost of Electric Main				13	11	9
Macadam for Walks				18	4	2
Printing, Stationery, Advertising, etc.				6	0	1
Postages					15	9
Furniture				12	1	0
Sundries				13	13	0
				£1,612	0	3

The income of the Hospital for the same year is stated as hereunder:—

	£	s.	d.	£	s.	d.
Maintenance of Patients	154	7	0			
Removal of Patients	2	5	0			
Rent of Land	1	10	0			
				158	2	0
From Cheshire County Council (under Isolation Hospitals Act) ...				263	19	9
				£422	1	9

Crewe Municipal Borough.

The following is a statement showing the number of patients in Hospital, average residence, and cost of treatment since 1898.

Year.	Patients.			Total expenditure.	Average cost per patient.	Daily cost per head for provisions	Provisions
	Total treated.	Average daily number.	Average residence in days.	£ s. d.	£ s. d.	s. d.	£ s. d.
1898	68	9.1	48.0	1,020 2 0	15 0 0	2 4	378 19 6
1899	73	9.6	48.0	1,083 7 1	14 16 9	1 11½	347 4
1900	158	20.3	47.0	1,161 11 8	7 7 0	1 1½	417 19 0
1901	129	17.0	48.0	1,367 0 10	10 12 0	1 5½	452 18 0
1902	102	11.7	42.0	1,173 5 9	11 10 0	1 5½	314 10 7
1903	169	22.4	48.5	1,404 6 7	8 6 2	0 11½	398 19 7
1904	298	34.2	42.0	1,642 14 3	5 10 3	0 10¾	561 2 4
1905	160	16.7	38.5	1,592 0 3	9 19 0	1 7¼	488 19 2

N.B.—The above calculations of cost do not include repayment of principal, nor payment of interest on capital. The rent of the Small-pox Hospital is also deducted.

The average length of stay in Hospital, in 1905, was as follows:—

Scarlet Fever Patients, excluding cases which died...	44.9 days
Scarlet Fever Patients, including cases which died...	43.5 „
Diphtheria and Membranous Croup Patients, excluding cases which died	24.7 „
Diphtheria and Membranous Croup Patients, including cases which died	22.9 „
Enteric Fever Patients, excluding cases which died...	34.0 „
Enteric Fever Patients, including cases which died...	18.2 „
Puerperal Fever Patients	23.6 „

Small-pox Hospital.—The Small-pox Hospital is situated upon the Corporation Farm on the north side of Pym's lane, off Minshull New Road. As it originally existed, excluding the part occupied by the caretaker and his family, there were two bedrooms available for patients, with suitable accommodation for a nurse. During 1903 further accommodation was provided by fitting up a small galvanized iron pavilion alongside the farm house. The Hospital has been unoccupied during the year, but has been kept ready for any emergency.

Crewe Municipal Borough.

Schools and Infectious Diseases.—The School record has, on the whole, been a very satisfactory one. The outbreak of measles (reported in 1904) continued well into the year, and necessitated certain closures. From that time, however, until the close of the year, there as been a remarkable freedom from infectious sickness of every kind, and the school attendances have, as a result, reached a high percentage of the number on the register.

The following schools were closed owing to the spread of infectious diseases among the scholars—

School	Closed	Re-opened.	Disease
Pedley Street Infants' ...	February 1st	February 20th	Measles
,, ,, ,, ...	February 20th	February 27th	,,
,, ,, ,, ...	March 1st	March 13th	,,
,, ,, Boys'& Girls'	February 13th	February 27th	,,
Bedford St. Infants' ...	February 22nd	March 27th	,,
,, ,, Boys'& Girls'	March 13th	March 27th	,,
Mill St. Wes., Infants' ...	January 26th	February 27th	,,
,, ,, Mixed ...	February 13th	February 27th	,,
Edleston Rd. Infants' ...	February 27th	March 27th	,,
Wistaston Road	April 3rd	April 19th (E'ter Holidays)	,,
New Street Infants' ...	June 20th	June 31st (Sum'r Holidays)	Whooping Cough

The following is a statement of the number of children, in 1904 and 1905, excluded from school on account of infectious disease, and whose absence was notified to the Health Department by the Head Teachers and School Attendance Officers.

	Totals. 1904.	Totals. 1905.
Measles	1,549	588
Whooping Cough	189	170
Chicken-pox	86	146
Ringworm	30	9
Mumps	87	3
Skin Disease	36	18
Miscellaneous	17	22
Total	1,994	956

Crewe Municipal Borough.

The following certificates have also been issued in respect of notified disease :—

Preliminary certificates	157
Final Certificates	37
	194
Add on certificates for diseases not notified... ...	956
Total number of certificates issued by M.O.H. ...	1,150

Playgrounds and open Spaces.—Those owned by the Corporation are :—

The Queen's Park.—Area a little over 35 acres, situate in the South Ward, at the extreme south-west boundary of the town.

South Ward playground, area 11,501 square yards. West Ward playground, area 8,356 square yards. North Ward playground, area 16,429 square yards.

Abatement of Nuisances.—The Sanitary Inspector reports that he has obtained the abatement of a large number of nuisances during the year. In 158 instances the nuisances were due to defective house drainage, 230 were due to defective privy-middens, ashpits, &c., 37 were due to cesspools, 81 were due to defective water-closets, 63 were due to defective paving of yards and passages, 35 were due to defective rain-conductors, and 20 were due to the keeping of animals. There were 5 smoke nuisances. In 117 instances house-drains were tested. The notices issued with respect to defective privies and ash-pits were 435.

During the year 1901, bye-laws were adopted prohibiting the deposit of filth or wet refuse in dry ash-pits, and the keeping of swine within 90 feet of any dwelling house.

Reconstruction of Privies, &c.—As indicating the steady progress that is being made in reconstruction of privies, etc., and in the provision of proper sanitary conveniences, the approximate number of baths, closets, privies, middens, &c., the following figures are given for the end of the year 1905, with corresponding figures for 1904 for comparison :—

	1904.	1905.
Baths	1629	... 1712
Water Closets	5422	... 5738
Waste Water Closets ...	1018	... 1018
Pail Closets	3021	.. 3163
Cesspool Privies ...	58	... 23

Crewe Municipal Borough.

	1904.	1905.
Fixed Receptacles ...	23 ...	23
Uncovered Privy Middens ...	21 ...	11
Covered Privy Middens ...	1310 ...	1201
Uncovered Ashpits ...	151 ...	75
Covered Ashpits ...	2431 ...	2353
Dustbins	6828 ...	6556

Principal Industries.—The bulk of the male population is employed at the London and North-Western Railway Company's Works. There are also Clothing and Fustian Cutting Works, which chiefly employ female labour.

Offensive Trades.—There are now two gut-scraping businesses carried on in the Borough. One of these was established during the year in Richmond Road, and the premises are of modern construction. Both businesses from a sanitary point of view are well regulated and have been conducted so as to be free from nuisance.

The marine store yards off Earle Street and in Edleston Road have been frequently visited during the year; at neither was there anything to complain of.

Cowsheds.—There are 47 cowsheds in the Borough. These have all been frequently during the year inspected, and in several some slight improvements effected. Their structure, however, leaves much to be desired, and it is hoped that the attention which is given to them will impress upon their occupiers the necessity for greater cleanliness. A special report upon the milk supply was presented to the Health Committee in May, and a number of recommendations made. A Sub-Committee has been formed to consider these.

Dairies and Milkshops.—There are 129 premises on the register where a retail trade in milk is carried on Here also, as with the cowsheds, the need for greater cleanliness is very apparent. What is required is more frequent scrubbing of floors, counters and shelves, the prohibition of the sale in the same shop of such articles as strong smelling vegetables, pickles, paraffin oil, etc., and the provision of a suitable cover for the milk vessels.

Common Lodging Houses.—There are 7 houses in the Borough now registered as common lodging houses. Every effort is made to see to these being kept in a sanitary condition, and the houses are fairly well conducted. Their defective structural character makes it difficult for the keepers to maintain them in a thoroughly satisfactory state.

Two applications for registration were refused by the Health Committee, the houses being altogether unsuited for the purpose.

Houses Let in Lodgings.—There are 5 houses on the register, which have been kept in a satisfactory condition. The model bye-laws relating to houses let in lodgings were adopted, and came into force in 1897.

Slaughter Houses.—The number of slaughter houses is fifteen. These are all kept in a fairly satisfactory condition. Application for a licence for premises in Wesley Street was renewed and again refused by the Council.

Meat Inspection.—This is a matter in which the Butchers' Vigilance Association has been of the greatest service. By the supervision which this Association exercises over the trade, the quality of meat exposed for sale is of a high standard. The ready co-operation of the Members of this Association with the Health Department is a matter for congratulation, as with the present staff, and considering the number of places in which slaughtering is carried on, anything like efficient inspection is extremely difficult, if not quite impossible to attain.

Nine carcases were examined upon request from the owners. Two of these were totally condemned and voluntarily surrendered. The others were passed, subject to the destruction of the affected portion. The disease in every case was tuberculosis.

Several carcases of animals which had died from Anthrax were also examined, the Veterinary Surgeon being one of the examiners. The carcases were all cremated.

Inspection of Ice Cream Premises.—A constant supervision has been maintained over the premises where ice cream is made and sold. The premises were at all times found in a cleanly condition, and at the largest very considerable alterations and improvements in the sanitary condition of the premises were made.

The Factory and Workshop Act, 1901, came in force on January 1st, 1902. By it all previous legislation on the subject is either repealed or consolidated, and it makes considerable alterations in the duties of District Councils (which include Councils of Municipal Boroughs) in regard to workshops and workplaces.

There are 68 factories and 207 workshops in the Borough. The latter include a great many places such as dressmakers' establishments, where the business is a small one, and is carried on in a room of the dwelling house set apart for the purpose. It

sometimes happens that in such small workshops the business is carried on somewhat intermittently, and changes of address are frequent. This makes it difficult to keep an absolutely correct register, but so far as possible all such changes have been followed up.

Table 18.—The following table of workshops shews the number in each Ward, and the nature of the trades carried on :—

Trade.	Central.	West.	North.	South.	Borough.
Bakers and Confectioners..	11	6	9	11	37
Dressmakers and Milliners	23	5	3	16	47
Tailors	8	3	1	2	14
Watchmakers & Jewellers..	5	1	...	1	7
Tinsmiths	5	...	...	1	6
Cabinet Makers & Joiners..	8	1	2	4	15
Bootmakers	9	8	7	11	35
Herb Beer Manufacturers and Bottlers	2	...	...	...	2
Saddlers	1	1	...	2	4
Cycle Repairers	2	....	...	3	5
Ice Cream Manufacturers..	2	3	...	4	9
Wheelwrights	...	...	...	1	1
Shirtmakers	1	...	...	...	1
Hosiers	1	...	1	...	2
Stonemasons	...	...	1	1	2
Picture Framers	1	...	...	1	2
Rag Stores	1	...	1	...	2
Blacksmiths	4	1	3	1	9
Laundry	...	...	...	1	1
Artificial Teeth Manufacturers	1	...	...	2	3
Scales Manufacturer ...	1	...	...	...	1
Gut Scraper	...	1	1	...	2
Totals	86	30	29	62	207

The condition of the workshops generally has been very satisfactory, although there were a few exceptions with regard to cleanliness. Twenty notices relating to limewashing were sent out and complied with. There were two instances of over-crowding. These matters were immediately remedied on the issue of a preliminary notice.

There is only one underground bakehouse in use. The only part of the business carried on underground is the mixing and the kneading of the dough.

By an order of the Home Secretary, dated November 14th,

Crewe Municipal Borough.

1903, Section 3 (Sub-Section 1) of the Factory and Workshop Act, 1901, is modified.

(1) as regards underground bakehouses by substituting "five hundred cubic feet of space to every person" for "two hundred and fifty cubic feet of space to every person"; and

(2) as regards bakehouses (other than such as are underground) where work is carried on at night by artificial light other than electric light, by substituting in respect of the period between 9 in the evening and 6 in the morning "four hundred cubic feet of space to every person" for "two hundred and fifty cubic feet of space to every person."

This order came into force on the 1st day of January, 1904.

There were 329 inspections made, and in consequence of what was observed 25 written notices were served.

The following list of Factories shows the nature of the manufacture carried on, and the number of the establishments belonging to each manufacturer in each ward.

Industry.	Central.	West.	North.	South.	Borough.
Loco. Engine Works ...	...	1	...	*	1
Electric Lighting ...	2	...	...	1	3
Clothing Factories ...	1	1	4	2	8
Cabinet Maker and Joiner	3	...	1	...	4
Cycle Works	1	...	...	...	1
Bottling & Herb Beer Manufactory	2	...	...	2	4
Brewery	1	...	...	...	1
Aerated Water Manufactory	2	...	1	...	3
Letterpress Printing ...	3	2	1	1	7
Laundry	...	...	1	...	1
Sausage Maker	2	1	...	2	5
Machine Smith	1	...	...	...	1
Wheelwright, Woodturner	2	...	1	...	3
Builder	2	1	2	2	7
Iron Founder	1	...	...	...	1
Baker	2	...	1	...	3
Brickworks	...	2	4	...	6
Fustian Cutting	1	2	.	...	3
Cattle Medicine	...	...	...	1	1
Firewood	...	1	...	1	2
Saw Mill	...	1	...	...	1
Chaff Cutting	1	1	...	...	2
Total	27	13	16	12	68

*These works are also partly in the South Ward.

Crewe Municipal Borough.

Sale of Food and Drugs Acts.—These Acts are administered by the County Authority. During 1905 there were 93 samples purchased in Crewe submitted for analysis, viz. :—2 brandy, 19 butter, 4 coffee, 2 ground ginger, 52 milk, 8 pepper, 1 vinegar, 5 whiskey. 3 samples of butter and 5 samples of milk were found to be adulterated. Five prosecutions were undertaken with the following results :—

No.	Nature of Offence.	Result of Prosecution.
1	Selling Milk adulterated with 5 per cent. of water	Ordered to pay 10/6 costs.
2	Do. do. do.	Case dismissed.
3	Selling Margarine as butter	Fined 1/- together with 19/6 costs.
4	Selling Margarine as butter	Fined 1/- together with 19/6 costs.
5	Offering for Sale a package of Margarine not properly branded	Fined £5 together with 27/- costs.

Adoptive Acts.—The Infectious Disease (Prevention) Act, 1890, came into operation in Crewe on January 1st, 1891. The Public Health Acts Amendment Act, 1890, came into operation in Crewe on February 1st, 1891.

Scavenging.—During the year the scavenging department was re-organised and the work re-arranged. Up to the present year both the day and night work were under the superintendence of a single foreman, who had, in addition, some other minor duties placed upon him. In May an additional foreman was appointed, and the work is now directed by day and night foremen who devote their whole time to it. The results have been of the most satisfactory character. The foremen have been able to so organise the work that since the summer it has been carried on with one gang less both on day and night work. The work done during the year and the cost of both team and manual labour is given in detail. The loads have been slightly increased in size, the result being that the total number of loads for the year is 914 less than the preceding year. The cost per load also shews a slight increase, but as a result of the increased size and diminished number the total cost has been reduced by £145 7s. 1d. The cost of day-work per load was 3/3¼ in 1905,

3/3 in 1904, 3/3¾ in 1903, and 3/0¼ in 1902. The cost of night-work per load was 5/4½ in 1905, 5/3 in 1904, 5/1 in 1903, and 6/1¼ in 1902. The sum paid for this work in 1905 was £2,923 9s. 6d., in 1904 it was £3,068 16s. 7d., in 1903 it was £3,007 9s. 9d , and in 1902 it was £2,984 9s. 3d.

Water-supply.—Water is supplied to the town from the Artesian Wells at Whitmore, Staffordshire, by the L. & N. W. Railway Company. The quantity of water used during 1905 was 201,038,120 gallons. This quantity is equal to 11.8 gallons per head of the population per day.

The figures giving the quantity of water consumed are made up from the accounts of the L. and N. W. Railway Company, and represent the water paid for by the Corporation; they include 20½ million gallons per annum, which is the approximate annual quantity used by the Company's houses.

Sewage Disposal.—There has been no change in the method of sewage disposal in 1905, the bulk of the sewage being still treated on the Corporation Farm by broad irrigation, while about one-fifth is treated by the double contact method.

The Corporation Farm was laid down in 1872, at a capital expenditure of £47,000, and has an area of 260 acres, 20 of which being pasture-land is being used for irrigation. This whole area has a sub-soil of stiff clay. Willows and rye-grass grow upon the Farm.

The sewage flows by gravitation to the lowest portion of the Farm along two main outfall sewers; the Northern, capable of taking 14 million gallons in 24 hours, and the Southern with a like capacity as far as the Gas Works in Victoria Avenue, but beyond that point only equal to 10 million gallons in 24 hours. The sewage is pumped, untreated, and delivered by elevated and ground-level carriers at whatever point is desired. The pumping is done by a beam engine which can lift 100,000 gallons per hour.

After passing over the land the effluents flow into two streams, the North Brook and the South Brook, each of which ultimately discharges into the River Weaver.

Owing to the facts that the subsoil of the farm is stiff clay, that the population of the town is rapidly increasing, and that this method of treating the sewage has not proved satisfactory, it was decided a few years ago to dispose of the sewage from the Northern Outfall (about one-fifth of the total quantity) by the bacterial method. Work in connection with the preparation of the septic tank and bacterial beds, carried out in 1901 and 1902

and the septic tank and all the five pairs of bacteria beds were in use in 1903, 1904, and 1905.

Forty-eight samples of sewage effluents from the bacteria beds have been submitted by the Borough Surveyor for analysis. On the whole the effluents have proved to be very satisfactory.

Back Passages out of Repair.—The condition of a number of back passages was reported during the year, and the attention of the Works Committee directed to them. In many streets such passages form the means of access to houses most commonly used, and in addition there is often a considerable amount of heavy traffic by coal carts, etc.

Dirty and Damp Dwelling-houses.—Notices were issued for the cleansing and limewashing of 94 houses. In several instances a second notice had to be issued before the work was carried out. Several houses were found in an extremely damp condition, the floor timbers affected with dry rot and water to a depth of several inches under the parlour floor. Steps were at once taken by the owners to have this remedied on their attention being directed to the state of their property.

Sewer Ventilation.—Complaints are being constantly received of the escape of sewer gas from street manholes and gullies. Permission has been obtained from a number of owners of property to have ventilating shafts erected, as close to the offensive manholes as possible. In connection with this matter it will be interesting to the committee to record a decision of some importance to Local Authorities which was given by Justice Bigham in the King's Bench Division of the High Court in the case of Broome *v.* the Bromley Rural District Council in November. It was alleged that a sewer ventilating shaft erected by the Council, and which was at a distance of 19 yards from the bedroom windows of plaintiff's house, was the cause of several members of his family contracting sore throats. The offer of the defendants to seal up the ventilator was objected to on the grounds, (1) that the sealing might become destroyed and the nuisance recur, and (2) that the ventilator was so unsightly as to depreciate the value of the property. Justice Bigham in summing up pointed out that the defendants were under a statutory duty to provide sewers and to ventilate them in a proper manner, and the fact of their erecting the shaft where it was and ventilating the sewer as they did, did not throw any obligation upon them or any responsibility as to damages, and for the plaintiff to succeed it must be shewn that the defendants had acted negligently. If defendants acted in a reasonable way, and

although what they did was injurious to health, then there would be no liability upon them. The jury found a verdict for the defendant District Council, and judgment was given accordingly.

Meteorology.—The following Table shews the result of observations made by Mr. George Latimer, Curator of the Queen's Park, Crewe :—

1905.	Total Rainfall in Inches.	Number of Rainy Days.	Mean Temperature.			
			Maximum in Shade.	Minimum in Shade.	1 foot deep.	4 feet deep.
January	1.36	5	39	31	39	43
February	4.43	11	42	33	40	42
March	6.71	17	48	33	41	43
April	4.48	14	50	35	45	44
May	2.51	6	61	43	50	48
June	2.42	8	71	46	57	52
July	4.87	11	73	50	62	57
August	6.08	16	67	46	59	58
September...	2.57	9	62	44	56	57
October	5.36	14	49	32	48	53
November...	5.11	18	44	30	43	48
December	1.8	23	43	31	41	45
Total	47.7	152	...	...	...	...

As compared with 1904, the rainfall was greater by four inches, and there were 30 more rainy days in the year. These occurred during the last quarter of the year, when the number of wet days in each month was nearly three times greater than in 1904.

DUKINFIELD

Municipal Borough.

Medical Officer of Health—Dr. J. R. S. Park.
Population at Census on April 1st, 1901—18,929.
Estimated Population in middle of 1905—19,500.
Area in acres—1,405.
Birth-rate per 1,000 living—23.7.
Death-rate per 1,000 living—16.3.
Death-rate from seven principal Zymotic Diseases—1.5.
Deaths under one year to 1,000 births—196.

The Urban District of Dukinfield was incorporated in 1899. The Municipal Borough had a population of 18,929 at the Census of 1901, and the population of the same area was 17,385 at the Census in 1891. The increase in the population during the decennium, 1891-1901, was thus 1,544, that is 8.8 per cent. The estimate of the population made for the middle of 1905 is probably not excessive.

The Borough is divided into three Wards, the population of which at the Census in 1901 was as follows:—

West Ward	5,612
Central Ward	6,699
East Ward	6,618

Dukinfield is situated on the left bank of the River Tame, a tributary of the Mersey, and whilst many factories and workshops are at the level of the river, most of the houses are built on the hillside, and in the eastern portion of the town the elevation is considerable.

The central portion of the Borough is fairly congested, but other portions, and more particularly the eastern portion, consist of farm land and open spaces, so that Dukinfield, although essentially a manufacturing town, is in part distinctly rural, and finds employment for many small milk-farmers.

The sub-soil is in part a loamy clay, and in part sandstone, and underneath this are coal measures. Although at the present moment no coal pits are working, for many years coal mining was a very important industry in the District.

The chief occupations of the inhabitants are—cotton manufacture—both spinning and weaving—engineering, boiler making, electric works, soap works, dye works, and rope manufacture. None of these industries are specially injurious to the health of the workers, and as a rule they are a fairly healthy class of men and women.

Dukinfield Municipal Borough.

The house accommodation is on the whole decidedly good. Much of the worst property has been demolished, or remains unoccupied.

In July, 1905, the following was the number of inhabited and empty houses in the Borough:—

	Number of Houses		
	Inhabited.	Empty.	Total.
Central Ward ...	1556	74	1630
East Word ...	1537	61	1598
West Ward ...	1249	56	1305
Total ...	4342	191	4533

Taking the population as at the Census of 1901 to be 4.48 per occupied house the following will be the result:—

	Population.				
	1901	1902	1903	1904	1905
Central Ward ...	6699	6686	6953	6922	6970
East Ward ...	6618	6721	6845	6832	6885
West Ward ..	5612	5559	5640	5644	5595
Total ...	18929	18966	19438	19398	19450

So that, although the total number of houses in the Borough has increased by 24 in the current year, the population has increased by 58, which would make the estimate of the population given for 1905 too high by fifty. In 1905, the number of births registered was 463, and the number of deaths registered (including 30 deaths of residents registered in Public Institutions beyond the Borough) was 319. The birth-rate is 4.5 below the average for the Borough in 1895-1904, and the death-rate is 2.8 below the average for the Borough in the same 10 years. The number of deaths in 1905, from the principal zymotic diseases was 29, viz.:—10 measles, 3 scarlet fever, 1 diphtheria, 1 whooping-cough, 7 enteric fever, and 7 diarrhœa. The Zymotic death-rate was therefore 1.5 per 1,000 living, which is about half the Zymotic death-rate in the Borough.

Cases of Infectious Disease notified.—During 1905, 83 cases of infectious disease were notified, viz.:—2 small-pox, 10 diphtheria, 47 scarlet fever, 20 enteric fever, 2 puerperal fever, and 2 erysipelas. Four of these cases were isolated in Hospital at Hyde, viz.:—2 small-pox and 2 enteric fever. All the other cases were treated at home. The Infectious Disease (Notification) Act was adopted in Novem-

ber, 1902. The notification of infectious disease has since this date been generally compulsory.

The number of infectious cases notified in 1904 was 190, the number notified in 1903 was 89, in 1902 it was 164. The number of notifications of infectious disease received month by month, in 1905, were as follows:—

1905	Typhoid.	Scarlet.	Small-pox.	Diphtheria.	Erysipelas.	Puerperal Fever	Croup.	Total.
January	4	8	2	1	0	0	0	15
February	2	4	0	0	0	0	0	6
March	1	9	0	1	0	0	0	11
April	2	8	0	2	0	0	0	12
May	0	4	0	0	0	0	0	4
June	4	2	0	2	0	0	0	8
July	1	0	0	0	0	0	0	1
August	2	2	0	1	0	1	0	6
September	0	2	0	2	0	0	0	4
October	1	3	0	0	0	0	0	4
November	1	2	0	1	2	0	0	6
December	2	3	0	0	0	1	0	6
Total ...	20	47	2	10	2	2	0	83

Small-pox.—It may be remembered that Small-pox was epidemic in Dukinfield in 1904. Two cases were notified early in January, 1905. These represent the last of the epidemic in 1904. Both cases were of a mild type, and were promptly removed to the Isolation Hospital at Hyde, where they soon recovered. If the people were really well vaccinated no hospital for small-pox would be required. In places where vaccination and re-vaccination are compulsory, any cases which may be imported can be safely treated in ordinary general Hospitals. The plan now adopted in Dukinfield when small-pox occurs is, perhaps, unique. Certainly, it is effectual, and not so expensive as quarantine, which used to be so much resorted to. The plan is, briefly, as follows:—

(1) The infected individual is sent to the hospital.

(2) Each member of the infected house is vaccinated.

(3) All members of the house are taken in a special

conveyance to Hyde, where while having a disinfected bath their clothes are disinfected by means of a steam disinfector.

(4) During their absence the house is thoroughly stoved, and the bedding, etc., destroyed.

(5) They are then allowed to go to their several employments.

Early in May, 1904, when small-pox was epidemic in the Borough, a Notice in the following terms was ordered to be printed and posted by the Sanitary Committee—

SMALL-POX.

This disease, which is one of the most infectious, dangerous, and loathsome of illnesses, has now appeared in the town.

Persons coming in contact, by neighbouring or otherwise, with cases so mild as scarcely to be noticeable, may take the disease in a severe and fatal form.

There is no doubt that unrecognised cases of small-pox, which is now prevalent, have been the means of spreading this disease in the town.

You are earnestly requested to assist the Health Authority in their endeavour to prevent its further spread.

This disease usually commences with sickness, headache, or back-ache, followed by an eruption or breaking-out on the face and arms.

If you have in your home a case with the above symptoms (however trifling it may seem to be) you are requested to communicate with the Medical Officer of Health, or with your own doctor.

Those who wish to receive the protection of vaccination, or of re-vaccination, should apply to the Public Vaccinator, Dr. Booth, Chapel Hill, by whom they will be vaccinated with calf lymph, free of charge. Of course, their own medical man will vaccinate them, if they wish, for a small fee.

Note—Anyone found concealing a case of small-pox, or otherwise breaking the law against the spread of this disease is liable to be prosecuted under the Public Health Act.

By order of the Sanitary Committee,

T. H. GORDON,

Town Clerk.

Town Hall,
May 10th, 1904.

Dukinfield Municipal Borough.

Vaccination.—The following statistics as to Vaccination have been supplied to the Medical Officer of Health by the Vaccination Officer. The Return is submitted in the usual Form, and relates to the vaccination of children whose births were registered in the Borough in 1905:—

Successfully vaccinated	273
Insusceptible of vaccination	1
Died unvaccinated	63
Postponed by medical certificate	13
Certificate of "conscientious objection to vaccination" obtained	15
Removal from the District...	17
Number of births unaccounted for	81
Births registered	463

It is interesting to note that only 15 certificates were granted to Conscientious Objectors. Of those born in 1905, 63 died unvaccinated, and 68.25 per cent. of the remainder were successfully vaccinated at the end of the year. Of the unvaccinated infants many were too young to be vaccinated, and some were ill.

Measles and Whooping-cough.—Measles account for 10 deaths, and whooping-cough for 1 death only. The child who died from whooping-cough, and 2 of those who died from measles, were under one year of age. These are the only deaths of infants from infectious disease in 1905. The proportion of deaths from whooping-cough is very small, as this disease in Dukinfield is more fatal than any other disease to children: Concurrent epidemics of measles and whooping-cough frequently occur. It is interesting to note the concurrence of these diseases in Dukinfield in 1897 to 1905. The deaths during the last 9 years have been as follows:—

	1897	1898	1899	1900	1901	1902	1903	1904	1905
Whooping Cough...	19	4	1	14	10	3	12	4	1
Measles	36	4	15	37	7	13	6	18	10

Whooping-cough ordinarily is a typical epidemic disease, occurring at short intervals of two or three years. In outbreaks which affect a large proportion of susceptible persons, owing to the absence of rash, and the insidious onset of the symptoms, the malady is rarely detected until many days after it has reached the infective stage. Preventive means are therefore not very successful. Owing to its early infectiousness measles spreads largely by the attendance of children at schools, and other places of public gathering, children who have not so far manifested any characteristic symptoms. It

is customary to close schools during an epidemic of measles, and in Dukinfield this has always been done with good results.

Diphtheria and Membranous Croup.—There were 10 cases notified of diphtheria, and none as membranous croup. Only one case proved fatal in 1905. It is remarkable that during the last three years the deaths from this fatal disease have been so few, there being only two deaths out of 23 cases. The mortality in previous years has been as high as 30 per cent. and upwards. The Medical Officer of Health attributes this greatly diminished mortality to the use of Anti-Diphtheritic serum, which is now regularly used early in nearly every case, and with very excellent results.

Scarlet Fever.—Of the 47 cases notified, 3 proved fatal. The mortality is decidedly below the average in the Borough in recent years. In 1904 there were 6 deaths, in 1903 there were 3 deaths, in 1902 there were 6 deaths, in 1901 there were 7 deaths, in 1900 there were 5 deaths, and in 1899 there were 6 deaths.

Scarlet fever is for the most part an epidemic disease which reaches its maximum in October, and its minimum as a rule about March, but in certain manufacturing towns in the north of England it is endemic.

The Medical Officer of Health remarks that there is no evidence of scarlet fever being conveyed by water, nor in Dukinfield is there evidence of its being conveyed by milk. He believes that the scarlet fever germ lives and thrives in Dukinfield, and is readily conveyed by infection. The germs which are conveyed by the bran like scales given off from the skin, readily attach themselves to clothing, and may be thus retained for months. Thus isolation of the patient is not sufficient unless combined with thorough and careful destruction of the germs.

Enteric Fever.—Of the 20 cases notified, 7 were fatal. This is a high case-mortality. The deaths compare unfavorably with the 5 in 1904, 3 deaths in 1903, 3 in 1902, 4 in 1901, and 3 in 1900.

Enteric Fever is a typical "filth disease." It is conveyed by polluted water, milk, and even oysters. Infecting material may be carried by flies, and in dust. Improved sanitary conditions have much lowered the death-rate from enteric fever, and the presence of this fever in any district points to insanitary conditions, or a faulty water-supply.

Diarrhœa.—Epidemic diarrhœa accounted for 7 deaths in 1905, but only 4 of these were in the third quarter. Five of those

who died had not reached their first year. The 7 deaths are equal to a death-rate of 0.35 per 1,000 living. There are, however, 15 deaths certified as due to enteritis, gastro-enteritis, or some form of gastric catarrh.

The Medical Officer of Health remarks that there is a great deal to be learnt as to the cause of epidemic diarrhœa, which has so much to do with infantile mortality in large towns.

Among the many causes which affect diarrhœa are :—

(1) Density of population.
(2) Density of buildings.
(3) Want of light and ventilation.
(4) Want of cleanliness.
(5) Foul air from sewers, &c.
(6) Drinking water.
(7) Poverty.
(8) Fermented food, including milk, and presence of flies.
(9) Maternal neglect.
(10) Damp, loose or porous soil.
(11) High temperature.
(12) Dry seasons with much dust.
(13) Micro-Organism in soil.
(14) Locality, certain towns being particularly liable.

Epidemic Influenza.—Four deaths were recorded under this heading in 1905. The number year by year varies considerably. The numbers during recent years are as follows :—1 in 1904, 2 in 1903, 1 in 1902, 3 in 1901, 4 in 1900, 9 in 1899, 2 in 1898, and 1 in 1897.

This disease attacks persons of all ages and both sexes, sometimes to the extent of a quarter or half of the population. The mortality from influenza is usually slight, except among persons already weakened by disease or pre-disposed to bronchitis or pneumonia. Very little is known as to how this disease is produced. However, it is undoubtedly highly infectious, and the pathogenic microbe has been identified. Notification, isolation, and disinfection are not practicable in dealing with an epidemic of influenza.

During periods of epidemic prevalence people should not congregate together, and public meetings should be avoided as much as possible. A regular life, plenty of open-air exercise,

short of fatigue, a proper number of hours in bed, and regular meals of good simple food are amongst the best prophylactics."

Cancer accounted for 15 deaths in 1905. There were 10 deaths from this cause in 1904, 16 in 1903, 11 in 1902, 10 in 1901, and 10 in 1900. The disease appears generally to affect people 30 years old and upwards. An increasing number of deaths has been ascribed to cancer in recent years, the explanations of which are not very satisfactory. In the opinion of some the malady is associated with a micro-organism. There is little doubt that certain soils seem to favor the production of this disease.

Phthisis and other Tubercular Diseases.—There were 11 deaths from phthisis and 17 from other forms of tuberculosis. The phthisis death-rate is not exceptionally high. The tendency to phthisis may be inherited, but whether heredity can do more than strongly predispose is not certain. It is remarkable how phthisis clings to certain houses and localities.

Infantile Mortality.—There were 91 deaths of infants under a year old in 1905. The mortality per 1000 registered was equal to 196 to each 1000 births. This compares with an infantile mortality rate of 198 in 1904, 188 in 1903, 182 in 1902, and 275 in 1901. During the 10 years, 1895—1904, this death-rate averaged 216. It will be noticed that there has been a considerable reduction in the infantile death-rate in Dukinfield since 1901, and that in 1905 this death-rate was well below the local average. Infantile mortality and its causes have been well considered in Dukinfield. Special arrangements for feeding young children with sterilized milk, prepared to resemble human milk, have in past past years been advocated in order to reduce this mortality. For each monthly meeting of the Sanitary Committee, a special report is prepared giving the results of enquiries relative to the deaths of infants under a year old. The high mortality of infants in this and other manufacturing districts is very difficult to explain, and as yet no definite cause has been shown by the inquiries and statistics submitted to the Committee.

The following table classifies the causes of deaths of infants during the year :—

Congenital.		*Infectious.*		*Gastric*	
Premature Births ...	12	Measles	2	Enteritis ...	9
Congenital Defects...	7	Whooping Cough	1	Gastritis.....	5
Atrophy.....				Diarrhœa ...	1
Debility.....	24				
Marasmus.....					
	43		3		15

Dukinfield Municipal Borough.

Tubercular		*Other causes*	
Meningitis.....	5	Syphilis.....	1
Tabes	1	Rickets	1
Other Tubercular Diseases ...	1	Convulsions	9
		Bronchitis.....	5
		Pneumonia	7
	7		23

Of these 91 deaths, 8 were under 1 day old.

,,	,,	16	,,	1 week ,,
,,	,,	20	,,	2 ,, ,,
,,	,,	27	,,	3 ,, ,,
,,	,,	31	,,	1 month old.
,,	,,	51	,,	3 ,,
,,	,,	65	,,	6 ,,
,,	,,	77	,,	9 ,,

The infantile Mortality in months was:—

	Central Ward	East Ward	West Ward	Whole District
January	158	166	333	200
February	200	59	250	166
March.....	222	0	0	56
April	235	143	300	220
May.....	250	545	375	323
June	273	200	100	193
July.....	62	0	166	75
August	235	200	266	234
September	294	66	200	190
October.....	250	250	428	296
November	166	166	750	225
December	88	353	272	250
Average.....	200	160	252	196

Action taken to prevent spread of Infection.—In all cases notified the Inspector of Nuisances is instructed to act as follows :—

1. To call as soon as possible at the house and get information as to (a) age of patient, (b) source of infection, (c) sanitary condition of house and surroundings, (d) isolation, if any, (e) milk supply, (f) schools attended.
2. To communicate at once with the Master of the school at which any member of the household attends.
3. To communicate with the Librarian of the Free Library, so that no book may be lent out to the infected house, and if any Free Library book be in the house, to disinfect or destroy it.

4. At the request of the Medical Practitioner in attendance, to fumigate the sick room with the fumes from burning sulphur. Disinfectants, in solution and powder, are provided free of charge, by the Authority. What is more important, the sick-rooms are thoroughly cleaned, and in many cases the walls are whitewashed.

The Infectious Disease (Prevention) Act, 1890.—This Act (sections 9, 10, and 12 excepted) was adopted during the year 1897.

Isolation Hospital Provision.—The accommodation arranged for consists of two beds for small-pox, and two beds for other infectious diseases, at the Hyde Hospitals, for which an annual sum is paid. In addition there is a charge of £2 2s. 0d. per case for Medical attendance in Hospital and 1s. 3d. per day for food. When more beds are occupied than those arranged for, the additional charge is to be at the rate of £3 3s. 0d. per case for medical attendance in Hospital.

Steam Disinfector, &c.—The Borough of Dukinfield use the disinfecting apparatus at the Hyde Hospital to disinfect bedding, clothing, etc., and the Disinfecting Baths provided at the Hospital, when required.

The Private Street Works Act, 1892.—This Act was adopted by the District Council in October, 1896.

Water Supply.—The Corporation of Dukinfield are joint owners with the Corporation of Ashton-under-Lyne, Stalybridge, and Mossley, of the District Waterworks. The water is gathered from the springs and streams in the Swineshaw Valley. It is pure and runs no risk of being polluted. The only fault is that the water is not quite sufficiently abundant. The consumption of water during 1905 was as follows:—

Gross supply	135,900,000	gallons.
For trade purposes... ...	22,158,700	„
Net supply...	113,741,300	„

The gross supply in 1905 was equal to 19.14 gallons per head per day. This compares with 18.17 gallons in 1904, and 20.22 gallons in 1903. In the 8 years 1896 to 1903, the average gross daily supply was 18.5 gallons per head. The net supply in 1905 was 16.02 gallons per head per day.

This water is very soft, and when in 1901 it had to be cut

of at night during parts of the year, some cases of lead poisoning were observed.

Since 1902, handbills, cautioning consumers against the waste of water, have been constantly circulated within the District, and this has certainly reduced the rate. Defective taps and service pipes to the number of 1320 were attended to during 1905. The following extensions and alterations have been completed by the Corporation workmen during the year:—764 yards of mains, various sizes, have been laid, 90 yards of new lead service pipes of various sizes have been put in, 26 new stop taps with boxes, &c., complete have been fixed, 10 valves and 5 hydrants complete have been fixed on mains, 19 meters have been repaired, and 3 new meters have been fixed.

The water reservoirs are stocked with trout of a good size and quality, from Stamford Park.

Rainfall.—The rainfall for the year 1905, as recorded at the raingauge at the Reservoirs, was 23 19 inches. In 1904, the rainfall was 27.63 inches. In 1903, the rainfall was 35.20 inches. In 1902 it was 24.54 inches; in 1901 it was 21.98 inches, in 1900 it was 33.46 inches; in 1899 it was 33.71 inches, and in 1898 it was 29.24 inches.

Smoke Nuisances.—Periodical observations and reports are made as to the amount of smoke issuing from the chimneys of factories, etc. Owing to representations made by the Authority some improvements have been effected.

Disposal of Excreta and Refuse.—The sanitary accommodation provided for houses in this District is of four kinds—ash-pit privies, pails, automatic flush closets, and ordinary water-closets. The privies and the pails are not satisfactory, nor are the automatic flush closets, and ordinary water-closets cannot be provided generally, owing to the insufficient water supply. The Corporation are pressing owners to put in automatic flush closets, though this apparatus is not approved of by many experts. The Medical Officer of Health is of opinion that such closets require to be well supervised, but that they are certainly better than ash-pit privies or pails. There are about 880 of them in the Borough. The Inspector inspects them monthly, and reports as to their condition. The Sanitary Committee do not allow new houses to have pails or ash-pit privies.

The contents of the ash-pit privies and the excreta from the pails are taken to the Corporation sewage farm in the night time.

Dukinfield Municipal Borough.

Scavenging is regularly and systematically carried out. During 1900 a machine was purchased for the purpose. The street sweepings are conveyed to Bradley Hurst, and all refuse from shops and ashpits is removed to the tip at the farm. The tip is an excellent one of its kind, being at a considerable distance from any property. However, providing a destructor would be the best way of getting rid of refuse.

Destructors reported on favourably.—The deputation which attended the Congress of the Royal Institute of Public Health in 1899, reported favourably on destructors, and particularly on Meldrum's Duplex Destructor, as working at Darwen Electric Supply Station.

Sewer Flushing.—The sewers are regularly flushed especially in dry weather.

The Sewage-disposal Works at Bradley Hurst were completed and opened during 1900. All the sewage is conveyed by means of a high-level and low-level sewer to the Works, and treated by precipitation (without the use of chemicals), filtration and by being passed through the land. The Sewage Farm at Bradley Hurst is 63 acres in extent.

Factory and Workshop Act.—The Medical Officer of Health reports that during 1903 all the workshops, bake-houses, etc., have been visited and reported upon. Most of the factories have also been seen. A register has been prepared and is kept up-to-date. Most of the premises are clean and in sanitary condition, and have been recently white-washed. The regulation as to air-space has in every case been complied with, while little or no complaint has been made as to insufficient ventilation. The bake-houses are all in order. On all premises closet accommodation is fairly well attended to. In the few instances where defects were pointed out they were immediately put right.

The Borough Surveyor reports that the provision of fire-escapes in the factories is satisfactory.

In 1904 and 1905 the requirements of the Act have been duly enforced.

Inspector's Report.—The Inspector, Mr. J. Summerfield, furnishes a list of the nuisances dealt with. There were 88 defective drains put in order, 72 dilapidated and offensive ash-pits were put in order and improved, and 91 obstructed flush-closets put in order.

Dukinfield Municipal Borough.

Refuse Removal.—The Inspector supervises the scavenging. The number of loads of street sweepings was 1,437. The number of loads of dry ash-pits refuse removed was 2,323. The number of loads of refuse from midden privies was 4,050. There were also 542 barrels of excreta removed from cess-pools.

Dairies, Cowsheds, and Milkshops are periodically inspected. There are 21 in the District, and, as regards the majority, there is little or no cause for complaint. The new regulations came in force in July, 1900.

Slaughter-houses.—There are ten slaughter-houses in actual use, these are kept clean and sanitary, but some of them are deficient in air-space, and situated in objectionable places.

Offensive Trades.—On two premises on the outskirts of the Borough offensive trades are carried on.

Back-to-back Houses.—In the Report for 1901 it was stated that a list had been made by the Inspector of all the back-to-back houses in the Borough, 176 in number, together with particulars as to number of family, number of rooms, repairs effected, closet accommodation, etc. This list (now somewhat reduced) still has attention, the Health Committee being anxious to improve the condition of the bad property in the Borough.

Canal Boats.—There is a mile of the Peak Forest Canal running through this Borough. The Inspector paid 29 visits to the Canal, and inspected in all 32 boats. The Canal Boats Acts, and Regulations made thereunder are enforced. All the boats inspected appear to have been in good order.

Open Spaces and Playgrounds.—In 1896 there were 12,383 square yards of land at the upper part of the market ground set apart by the District Council as a Recreation Ground. A Committee, appointed four years ago, to negotiate for the purchase of land as a Public Park, completed their work in 1897, by purchasing 10 acres of land centrally and conveniently situated. In September, 1899, the first sod was cut and the first tree planted. The work of laying out this land was completed, and the little "park" was opened in 1902.

Cemetery.—The Local Authority are joint-owners with the Ashton-under-Lyne Corporation of a large cemetery, situated in Dukinfield, which is sufficient not only for present needs, but for the requirements of many years to come.

HYDE

Municipal Borough.

Medical Officer of Health—Dr. J. Bennett.
Population at Census on April 1st, 1901—32,766.
Estimated Population in middle of 1905—33,866.
Area in acres—3,081.
Birth-rate per 1,000 living—22.3.
Death-rate per 1,000 living—17.8.
Death-rate from seven principal Zymotic diseases—2.1.
Deaths under one year to 1,000 births—191.

The population of this Municipal Borough was 30,670 at the Census in 1891, and 32,766 at the Census in 1901. The increase in the population during the decennium, 1891-1901, was thus 2,066; that is 6.8 per cent. By adding to the Census population the natural increase since the Census, an estimate of the population is made for the middle of the year 1903.

The population of the three Townships of Hyde, Godley, and Newton, was, at the date of the Census, as follows:—

Hyde	...	...	...	23,668
Godley	...	...	...	1,691
Newton	...	...	...	7,407

During 1905 the number of births registered was 757, and the number of deaths registered (excluding 6 not belonging to the Borough, and including 34 belonging to the Borough, which took place in Hospitals in Manchester, Stockport, etc.), was 604. The birth-rate is about 4.8 below the average in the Borough in 1895-1904, and the death-rate is 0.04 above the average in the Borough in the same 10 years.

The seven principal zymotic diseases account for 72 deaths, viz.:—22 measles, 10 diphtheria, 10 scarlet fever, 6 whooping-cough, 12 enteric fever, and 12 diarrhœa. The zymotic death-rate (2.1) was high. The general death-rate in the Township of Hyde was 18.3; in the Township of Godley 12.0; and in the Township of Newton it was 16.9.

Infant Mortality.—The number of deaths of children under one year of age was 145, being equal to 191 per 1,000 births. The infant mortality rate for the 10 years, 1895-1904, was equal to 209 per 1,000 living. In previous Reports the Medical Officer of Health has stated his belief that this

abnormally high death-rate was due to inexperience and neglect of mothers, improper feeding, uncleanly and consequently unhealthy houses, and, in a less degree, the employment of mothers in factories.

The following tabular statement shows the causes of death of infants under a year old in 1905, and the three years immediately preceding:—

Cause of Death.	Year 1905	Year 1904	Year 1903	Year 1902
Small-pox	0	0	1	0
Measles	6	1	2	14
Diarrhœa	8	20	4	9
Whooping Cough	5	3	8	5
Erysipelas	0	0	0	1
Pneumonia	9	5	8	16
Bronchitis	9	8	13	6
Other Tuberculous Diseases	2	11	4	7
Marasmus	53	43	28	34
Convulsions	17	22	26	31
Enteritis	1	4	2	1
Premature Birth	13	18	26	22
Diphtheria...	2	1	0	0
Venereal Diseases... ...	2	2	0	0
Other Causes	18	23	26	14

In the Report for 1902 it was stated that, as a result of the recommendations of the County Council, after a conference with a deputation from that body, it was decided to appoint a Female Sanitary Inspector. Accordingly Miss Woodfield was appointed, and entered on her duties in July, 1902. She was a fully-trained nurse, and held the certificate of the Sanitary Institute. Her duties were as follows:—

1. To visit from house to house in localities, as directed by the Medical Officer of Health, and to urge the importance of cleanliness.

2. To visit especially the mothers of newly-born infants, and give instructions on feeding and clothing of infants and young children. (The addresses at which newly-born infants are to be found are obtained from the Registrar every week.)

3. To take note of the sanitary condition of the house visited, the number of rooms and occupants, the existence of offensive smells and their cause (whether from dirt or neglect of tenant or landlord), and to observe the mode of living with regard to personal and domestic cleanliness.

4. To report all defects found to the Medical Officer of Health.

5. To act as Inspector under the Factory and Workshops Act, 1901, in the case of all workshops where women or girls are employed.

In the Annual Report for 1903, the Medical Officer of Health reported that Miss Woodfield resigned her appointment in November, 1903, to take up a similar one at Rochdale, and that no one had been appointed in her place. "Miss Woodfield was employed mainly in visiting the mothers of infants in the worst districts. She gave them instruction in the feeding and care of their children, impressing on them when necessary the importance of cleanliness and ventilation. It is difficult to say whether her work has had a beneficial effect. The death-rate is certainly much lower than usual, but it must be taken into account that there has been during the year no outbreak of any of the infectious diseases which seriously affect infants. During the summer the rainfall was high and the temperature low, consequently there is an absence of the usual large number of deaths from diarrhœa. On the other hand, in work of this kind, which is largely educational, and which involves the eradication of habits and customs long established in adults, it would be premature to expect any striking results after eighteen months."

On March 14th, 1904, the question of appointing a successor to Miss Woodfield was again considered, but no successor was appointed.

Cases of Infectious Disease notified.—During 1905, there were 396 cases of infectious disease notified, viz.:—18 diphtheria, 6 membranous croup, 189 scarlet fever, 54 enteric fever, 8 puerperal fever, 53 erysipelas, 55 chicken-pox, and 13 phthisis. Of these 190 were removed to the Isolation Hospital, viz.:—179 scarlet fever, and 11 enteric fever. The following table shows the number of notifications of each notifiable infectious disease received during each month of the year 1905:—

Hyde Municipal Borough.

Disease.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total 1905.
Scarlet Fever ...	3	4	8	9	10	8	8	24	23	37	19	36	189
Enteric Fever ...	7	8	5	3	3	...	5	6	5	4	6	2	54
Diphtheria & Membranous Croup	4	3	3	4	2	2	...	2	...	2	2	...	24
Erysipelas	4	3	3	4	6	...	3	10	2	4	8	6	53
Puerperal Fever...	2	...	...	1	...	2	...	1	...	...	1	1	8
Chicken-pox ...	3	8	8	...	...	...	...	6	...	4	12	14	55
Total... ...	23	26	27	21	21	12	16	49	30	51	48	59	383

The next Table shows the number of cases of each notifiable infectious disease in each of the three Townships within the Borough:—

Disease.	Hyde.	Newton.	Godley.
Scarlet Fever ...	121	54	14
Enteric Fever ...	38	16	0
Diphtheria and Membranous Croup ...	20	3	1
Puerperal Fever ...	6	2	0
Erysipelas	34	19	0
Chicken-pox ...	27	19	9

Diphtheria and Membranous Croup.—The 24 cases notified were isolated at home, as well as practicable. As 10 proved fatal, the case mortality must be considered high. Throughout the year antitoxin has been supplied for use in the Borough by the Corporation.

Scarlet Fever.—Of the 189 cases reported, 179 (94.7 per cent.) were removed to the Isolation Hospital. As 10 deaths were recorded, the mortality was equal to 5.3 per cent. The disease was more prevalent and of a more virulent type during the last five months of the year.

Enteric Fever.—Of the 54 cases notified only 11 were removed to Hospital. No cases were traced to contaminated water or milk. As in past years, the number of cases was relatively less in Hyde than in Newton, where the largest number of midden-privies yet remain. Pails with air-tight covers for the reception and removal of the excreta of typhoid

fever patients are supplied at houses which are not on the water-carriage system. Disinfectants are supplied free in every case.

Measles.—The number of cases of this disease is not known, but the mortality is certainly high. The 22 deaths recorded are equal to a death-rate of 0.65 per 1,000 living. Most of the deaths occurred during the summer months, when an epidemic of a mild character prevailed in all the Districts of the Borough.

Whooping-cough.—The 6 deaths recorded are equal to a death-rate of 0.17 per 1,000 living. In 1904, the whooping-cough death-rate was equal to 0.29 per 1,000 living.

Diarrhœa.—The 12 deaths from this disease are equal to a death-rate of 0.35 per 1,000 living. Eight of those who died were infants under a year old, and all were under 15 years of age.

Action taken to prevent spread of Infection.—On receipt of a notification, the house infected is immediately visited, and enquiries are made as to the origin of infection, the sanitary state of the premises, and the means available for isolation at home. When home isolation is not possible, the case is removed to hospital, the house and contents immediately afterwards disinfected, and disinfectants are supplied free of cost for the use of the inmates. When cases are treated at home, disinfection is carried out as soon as the medical attendant certifies that the patient has recovered, and is free from infection. In the case of enteric fever only urgent cases are removed to hospital, the accommodation being limited. The librarian is notified daily of all infected houses. School children from any house at which an infectious case has been notified, are kept at home for a period corresponding to the incubation of the disease, after removal to hospital has taken place, and until the recovery of the patient when the latter has been kept at home.

The following inquiry form has been introduced, and is in use in the district.

BOROUGH OF HYDE.

SANITARY DEPARTMENT.

(Form of Inquiry relating to Infectious Diseases.)

Disease ..... Date.....190

Occupier's Name .....

Occupier's Address .....

Hyde Municipal Borough.

Owner's Name .....
Owner's Address .....
Patient's Name ..... Age.....
Patient's School ..... Last there.....
Patient's Workplace..... Last there.....
Date of onset of Symptoms .....
Other Members of Family. } Schools.....
Workplaces.....
Ages.....
Removed to Hospital .....
House Disinfected .....
Doctor's Name .....
Date of Doctor's first visit .....
Any Inmates of House gone away..... Where.....
Business carried on, or work done at home.....
Nursed by.....Other duties of Nurse.....
Milkman's Name .....Address.....
Rooms occupied by Patient..... Condition of.....
No. of rooms in House. Upstairs.....Downstairs.....
Other sources of Infection, *i.e.*, visitors, shellfish, visiting, ice cream, etc. .....

DRAINAGE. Cellar .....Sink.....
Bath, etc..... .....W.C.....
Yard Drains.....Rain Water.....
Ventilation of House Drains .....
Main Sewer. Situation.....Ventilation.....

PRIVY Kind..... ...Distance from House .....
Last Emptied.....Condition.....
Ashpit..... .. ..

NUISANCES. State of Back-yard..... .....
State of Passages.....
Accumulations.....
Animals kept..... .....

Books from Library ....

Remarks..... .....

Phthisis and other Tubercular Diseases.—During 1905, there were 44 deaths from phthisis, and 15 from other forms of tubercular disease. The phthisis death-rate is equal to 1.3 per 1,000 living, and the death-rate from other tubercular diseases is equal to 0.44 per 1,000 living. Thirteen cases of phthisis were voluntarily notified during the year. In each case the house was visited, and a copy of the leaflet printed below was given to the occupier.

INSTRUCTIONS TO PERSONS SUFFERING FROM CONSUMPTION.

Consumption is an Infectious Disease which is communicated in the following way:—

The infection is contained in the spit, or expectoration, of a patient suffering from the disease. The expectoration is deposited on floors, walls, cloths, handkerchiefs, etc., where it dries and gets mixed with dust and is blown about in the air. This infected dust is inhaled by healthy persons, and produces consumption in their lungs.

The following precautions should therefore be taken by Persons suffering from Consumption, to prevent the infection of others.

They should not spit on the floor or walls of any living room, workshop, railway carriage, or in any place where people assemble. At home they should spit in a piece of paper or rag, and immediately throw this into the fire. A cup containing water may be used, which should be frequently emptied into the drains outside the house, and before being used again the cup should be thoroughly cleansed with boiling water.

When away from home, a pocket spittoon, with a tight fitting cover, should be used, or the expectoration deposited in pieces of tissue paper, rolled up, and burned before the spit becomes dry.

All eating utensils should be thoroughly washed in boiling water before being used by another person.

Persons suffering from Consumption should not kiss on the lips.

Rooms occupied by Consumptive persons should be kept thoroughly clean, and as much fresh air and light admitted to them as possible.

Clothes soiled with expectoration should be washed and boiled.

As soon as it becomes known that a person is suffering from Consumption, the rooms occupied by the patient should be thoroughly disinfected. This will be done free of cost, or if the householder desires to do the work himself, directions will be given. When once the rooms have been thoroughly disinfected and cleaned, it is easy to keep them so by washing the floors

frequently with soap and water, and dusting them every day with a wet duster, so as to prevent infectious dust being scattered about the room.

The walls of a room occupied by a consumptive patient should be rubbed down with dough every three months.

A consumptive patient and his clothes should be kept scrupulously clean.

The commonest conditions which render persons liable to contract Consumption are overcrowding, damp rooms, want of fresh air and ventilation, and want of light, therefore all these conditions should be avoided as far as possible.

A consumptive person leaving a house should notify the fact to the Medical Officer of Health, so that it may be disinfected before being occupied by another tenant.

J. BENNETT,

Medical Officer of Health.

Bronchitis and Pneumonia.—In 1905, there were 48 deaths ascribed to bronchitis, and 46 ascribed to pneumonia. The death-rate from the two diseases taken together is equal to 2.8 per 1,000 living. Eighteen of those who died were infants under a year old, and 18 were between 1 year and 5 years old. Children whose vitality is low, either from unsuitable or insufficient food, or from insanitary or overcrowded dwellings suffer from these diseases.

Coroners' Inquests.—In 53 instances the causes of death were investigated by the coroner, that is 8.7 per cent. of the deaths recorded. The following tabular statement gives in brief the verdicts returned :—

Verdict.	No.
Heart Disease	11
Convulsions	7
Accidents	10
Apoplexy	4
Found Drowned	6
Hemorrhage	2
Burns	1
Suicide	5
Inanition...	3
Diarrhœa...	1

Hyde Municipal Borough.

Verdict.	No.
Measles	1
Suffocation	1
Bronchitis	1

Isolation Hospital.—There were 190 cases of infectious disease belonging to the Borough removed to the Hospital during 1905. As already stated, 179 of these were cases of scarlet fever, and 11 were cases of enteric fever. Seven of the cases of scarlet fever and 5 of the cases of enteric fever terminated in death.

The number of cases of infectious disease received into Hospital from other Districts is as follows :—

District.	Scarlet Fever.	Enteric Fever.	Small-pox.	Total.
Dukinfield	0 ...	2 ...	2 ...	4
Bredbury and Romiley	2 ...	1 ...	0 ...	3
Droyesden ...	0 ...	0 ...	19 ...	19
Hazel Grove ...	1 ...	0 ...	11 ...	12
Marple	6 ...	0 ...	0 ...	6
Denton	6 ...	1 ...	0 ...	7
Audenshaw ...	3 ...	2 ...	2 ...	7
Ashton-under-Lyne	1 ...	0 ...	0 ...	1

New Isolation Hospital.—The new Hospital was completed during the year, and officially opened on 7th June. In it accommodation is provided for 32 scarlet fever patients in two pavilions, each pavilion containing two wards, 10 typhoid patients in one pavilion of two wards, and 10 diphtheria patients in a similar block. There is also an observation block, having two wards, with one bed in each. The administrative building provides accommodation for the whole of the staff. There is also a laundry building, a discharging room, mortuary and lodge. The total cost of the Hospital is not yet known, but the Architect, Mr. Mitchell, has kindly supplied the following particulars, which he believed will approximately cover the expenditure :—

Area of the Site...	5½ Acres
Buildings, Drainage, Fence Walls, and Entrance Gates	£13,000
Laying-out Grounds, Making Roads, Planting Trees, Gas and Water Mains, Lighting Roads, Fire Appliances, and Telephones ...	£1,100
Furnishing, Fittings, and Cooking Appliances...	£1,198
Steam Boiler, Machinery, Laundry Fittings, and Disinfecting Apparatus	£527
Approximate Cost	£15,825

It will thus be seen that the cost per bed is £293, which will compare very favourably with the cost of similar institutions which have been recently built, and reflects the greatest credit on the architect. The Old Hospital is being retained for small-pox cases only.

Hyde Corporation Act, 1903.—Under this Act many additional useful powers have been gained in connection with infectious diseases and sanitation. This Act also contains "milk clauses," giving powers to check the sale of tuberculous milk within the Borough. These clauses are practically the model clauses of the Local Government Board.

Water-supply.—The domestic water-supply is obtained from the reservoirs of the Manchester Corporation, situated at Woodhead. It is abundant, and of good quality. That for trade purposes is obtained from the reservoirs of the Hyde Corporation, situated at Gee Cross.

Dairies, Cowsheds, and Milkshops.—Regulations under the Dairies, Cowsheds, and Milkshops Orders have been in force since October 2nd, 1899. There are 53 persons registered as cowkeepers in the Borough. They have all been visited, and many recommendations made for improvement of the premises have been carried out. Some recommendations have not yet been given effect to.

Slaughter-houses.—There are 29 registered slaughter-houses in the Borough. These have been regularly inspected, and were found to be kept according to the regulations. The difficulty of arranging for efficient inspection of meat is considerable. Additional powers have been obtained in regard to slaughter-houses under the Hyde Corporation Act, 1903.

Unsound Meat.—No unsound meat was discovered exposed for sale during the year.

The Chief Industries are cotton manufacture, engineering, boiler-making, calico printing, hat manufacturing, margarine making, coal mining, leather dressing, printing, and the manufacture of india rubber goods.

Offensive Trades.—The only offensive trades carried on in the Borough are those of tripe-boiler and soap-boiler. The former trade is carried on in 4 establishments; the latter in one. All have been regularly visited and found clean and well kept. No complaints have been received as to nuisance therefrom.

Hyde Municipal Borough.

The Public Health Acts Amendment Act has been in force since April 14th, 1891.

Common Lodging Houses.—There are now three common lodging-houses, which provide accommodation for 83 lodgers. The structural arrangements are very imperfect, they are badly ventilated, and are altogether unsuited for the purpose.

Insanitary Property.—The following improvements to insanitary property, recommended in the Annual Report for 1904, have been carried out :—

Nos. 30 and 32, Reynold Street, have been converted so as to provide through ventilation, the single houses at the back have been demolished, and modern wash-down closets put in.

Nos. 31 to 37, Cheapside, and 1 to 4, Leigh Court. These were eight back-to-back houses, which have been converted to form four houses, with through ventilation.

Green End Court. Two back-to-back houses have been thrown into one, so as to provide through ventilation, and two others have been so altered as to give satisfactory ventilation.

No. 8, Ridling Lane and 2, Beeley's Yard. These were two single houses, which have been made one, with good ventilation and drainage.

Nos. 62 and 64, Hyde Lane, with two houses at back. These four back-to-back houses have been converted into two houses with through ventilation and satisfactory drainage.

No 67, John Street, and one house behind, have been thrown into one house.

The following list of Insanitary Property might be dealt with during the ensuing year :—

Nos. 26 and 28, Catherine Street, and 1 and 2, Washington Court. Four back-to-back houses.

Nos 2, 3, 4, and 5, Perrin Court. These are single houses, without through ventilation.

No. 66, Hyde Lane, and house behind, in Dawson Court. Two back-to back houses.

Nos. 52 and 54, Grafton Street, and 1 and 2, North Court. Four back-to-back houses.

No. 6, King Street, and 1, King Court. Two back-to-back houses.

No. 33, Victoria Street, and 2, Meadowcroft Court. Two back-to-back houses.

No. 23, Commercial Brow, and 2, Andrew Square. Two back-to-back houses.

Nos. 57, 59, and 61, Old Road, and three houses in Firth Court. Six back-to-back houses.

No. 18, Commercial Street, and house behind. Two back-to-back houses.

No. 9, Grafton Street, and 1, Pitt Street. Two back-to-back houses.

No. 5, Norfolk Street, and house at back, in Rayner Court. Two back-to-back houses.

No 42, Russell Street, and house at back. Two back-to-back houses.

No. 37, Commercial Brow, and houses behind it in Water Street. These are two back-to-back houses.

Factory and Workshop Act.—This Act has been enforced in 1905. There were 18 inspections of Factories, including Factory Laundries, 253 inspections of Workshops, including Workshop Laundries, and 92 inspections of Home Workers' premises. In all 43 written notices to remedy defects were served and complied with. No prosecutions were needed.

Nuisance Abatement.—The Chief Sanitary Inspector sees that all nuisances (complained of or discovered) are promptly abated. During the year 285 formal notices were served for the abatement of nuisances, and were in due course carried out.

Ashpit Privies converted.—During 1905 there were 157 ashpit privies converted into water closets.

Refuse Removal.—The Sanitary Committee undertake the removal of the refuse from privies and ashpits with their own staff of men, horses and carts. The work has been thus carried out much more efficiently than when it was done by contractors or owners. Much of the refuse of the town is taken to the destructor and there burnt; tips are made use of for the dry and inoffensive refuse. The Chief Sanitary Inspector, Mr. J. Shawcroft, has charge of this work. During 1905 there were 5,866 ashpit emptyings, and 19,629 ashbins or boxes full of refuse removed. There were 7,421 loads of refuse taken to the Destructor during the year.

Ashpits being replaced by Ashbins.—The Medical Officer of Health having pointed out that many of the ashpits were large and uncovered, and consequently liable to become wet and foul, recommended that ashbins (with tight-fitting lids) be substituted for such ashpits. This advice has been taken in a large number of cases, and there are now a great many of such ashbins in use. The number is increasing every year.

MACCLESFIELD

Municipal Borough.

Medical Officer of Health—Dr. J. H. Marsh.
Population at Census, 1901—34,624.
Estimated Population in middle of 1905—34,624.
Area in acres—3,214.
Birth-rate per 1,000 living—21.6.
Death-rate per 1,000 living—18.1.
Death-rate from seven principal Zymotic Diseases—1.6.
Deaths under one year to 1,000 births—149.

The population of this Municipal Borough was 36,009 at the Census in 1891, and 34,624 at the Census in 1901 The decrease in the population during the decennium 1891-1901 was thus 1,385—that is 3.84 per cent. It is assumed that the population has remained the same as at the Census of 1901. However, the Medical Officer of Health is of opinion that some of the factors which cause a decline in the population are still in operation. The factors referred to are (1) Excess of emigration over immigration, and (2) The low birth-rate. At best the population is stationary, yet there is evidence that it is declining.

Soil and Elevation.—The soil of the Borough is variable. To the west and north-west sand and gravel lying on boulder-clay alternate, the sand predominating. In the centre of the town are several feet (2 to 5) of coarse gravel on clay. On the east side there is brick-clay on sand and gravel, and to the south boulder-clay. The substratum is new red sandstone. The elevation of the town varies between 400 and 500 feet above sea level.

Births and Deaths.—In 1905 the number of births registered was 751. This number is equal to a birth-rate of 21.6, which compares unfavourably with the birth-rate of 1904 (22.6) and of 1903 (25.1). In 1905 the number of deaths registered (excluding the deaths of 88 persons not belonging to the Borough at public institutions, &c., viz : 26 at the Union Workhouse, 56 at the Asylum, 5 at the Infirmary and 1 at West Macclesfield) was 628. This number is equal to a death-rate of 18.1, which compares favourably with the death-rate of 1904, but unfavourably with the death-rate of 1903 (17.3) and 1902 (15.1).

Illegitimate Infants.—The percentage of illegitimate infants to the number of infants born in 1905 was 6.3.

No Uncertified Deaths were recorded in the Borough in 1905.

Macclesfield Municipal Borough.

Infant Mortality.—Of the whole number of deaths belonging to the Borough, 112 were of infants who had not completed their first year, being equal to 149 deaths to each 1,000 births. Of these 112 deaths, 10 were due to whooping-cough, 15 to diarrhœa, 5 to enteritis, gastritis, &c., 23 to premature birth, 3 to congenital defects or injury, 11 to atrophy and debility, 11 to tubercular disease, 9 to syphilis, 6 to convulsions, 5 to bronchitis, 6 to pneumonia, and 4 to suffocation or overlaying.

The association of diseases of the digestive organs and respiratory organs in young children is very close. Many of the children who survive diseases associated with the digestive organs are more or less weakly, and peculiarly liable to succumb to lung disease with the onset of the colder weather. Again, measles and whooping-cough are prone to follow, or are associated with bronchitis and bronchial pneumonia, particularly in the squalid, overcrowded, neglected dwellings of the poorest class.

Infant mortality is closely connected with infant feeding. The Medical Officer of Health points out, as a fact, full of instruction, that when during the suffering and starvation of the siege of Paris, the general mortality of the population was doubled, that of the infants was reduced by 40 per cent., simply from the mothers being compelled by circumstances to suckle their babies, and the same increase in the adult, and reduction of the infant mortality, was observed during the Lancashire cotton famine, when mothers were no longer at work in the mills.

An opinion is expressed that the Education Authority might do more to teach the older school girls how to feed and manage a baby. Practical demonstrations might be given in the advanced classes in day schools and evening continuation schools. In Macclesfield much good is done by the Ladies' Public Health Society, which is supported by voluntary contributions, and has taken in hand the question of reducing the death-rate amongst infants in this town. A number of ladies have undertaken to visit and advise mothers on the care of their children.

During the year 1904 a well qualified lady health visitor—Miss Brett—was appointed, and to her was assigned the District of East Macclesfield. The results so far have been most satisfactory. According to her report she has now under her charge 479 cases, and paid 3,943 visits. Commenting on this, the Medical Officer of Health remarks:—"Such an amount of good work, systematically and thoroughly carried out, day by day, by a highly trained lady, cannot fail to do an immense amount of good, and this year's results amply justify the expectations with which

the Society started, and should serve as a valuable stimulus to the members and supporters of the society."

The following brief tabular statement indicates that the infant mortality was much reduced in 1902, 1903, and 1905, and especially in the area where the improvements were most needed:—

Districts.	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905
West Macclesfield (excluding Public Institutions) ...	138	152	189	223	167	186	111	110	173	168
East Macclesfield and Hurdsfield ...	180	187	159	167	242	155	103	170	190	132
Sutton	148	212	135	187	142	219	65	114	166	129
Whole Borough ...	155	175	173	196	190	180	102	134	178	149
England and Wales	148	156	161	163	154	151	133	132	146	128

Zymotic Mortality.—The number of deaths in 1905 from the seven chief zymotic diseases was 56, viz.:—1 small-pox, 1 measles, 7 scarlet fever, 6 diphtheria, 18 whooping-cough, and 23 diarrhœa. The death-rate as regards the chief zymotic diseases was therefore 1.6 in 1905, which is an improvement on the record (2.3) for 1904. In the Borough of Macclesfield this death-rate steadily fell from 1874 to 1894. In 1874-8 this mean death-rate was 3.0, in 1879-83 this mean death-rate was 2.3, in 1884-8 the same death-rate was 1.9, and in 1889-94 the mean rate was 1.7. In 1895 this death-rate rose to 3.7. In the two following years it was 3.3. In 1898 this death-rate fell to 1.8. Thus after three years, during which the zymotic mortality was much in excess, it became moderate for a year. In 1899 this mortality increased again, being 2.7, and in 1900 it fell to 1.8. This death-rate fell again in 1901 to 1.6, and in 1902 it was 0.3, which is low beyond all precedent. In 1903 it was still low, being 0.8. Thus the rise in 1904 is quite remarkable.

Cases of Infectious Disease notified.—During 1905 there were 177 cases of infectious disease notified, viz.:—6 small-pox, 12 diphtheria, 2 membranous croup, 103 scarlet fever, 13 enteric fever, 5 puerperal fever, and 36 erysipelas. During 1904 there were 224 cases notified, and during 1903 there were 282 cases notified. In 1902 there were 185 cases notified. In 1901

there were 104 cases. In 1900 there were 156 cases, and in 1899 there were 364 cases.

The distribution of the cases of infectious disease in 1905, and the number of cases removed to hospital from each locality is indicated in the following tabular statement:—

Notifiable Diseases.	Total notified in each Locality.			No. of Cases removed to hospital from each locality		
	West Macclesfield. W. and E.	East Macclesfield.	Sutton.	West Macclesfield.	East Macclesfield.	Sutton.
Smallpox ...	1	2	3	1	2	3
Diphtheria ...	9	2	1	2	1	...
Membranous Croup ...	1	...	1	...	...	...
Erysipelas ...	22	8	6	...	...	...
Scarlet Fever ...	74	16	13	56	9	9
Enteric Fever ...	7	5	1	...	..	...
Puerperal Fever...	5	...	...	...	...	...
Totals ...	119	33	25	59	12	11

Small-pox.—Of the 6 cases notified in 1905, one was in West Macclesfield, two in East Macclesfield, and three in Sutton. Five of the cases represent the last of the epidemic which was declining at the end of the year 1904. The following particulars of the six cases are submitted. It is interesting to note that 3 of these cases were infected by a young woman who was certified to be suffering from chicken-pox, and one of the 3 cases was the fatal case.

Macclesfield Municipal Borough.

Sex.	Age.	Vaccinal Condition.	Remarks.
M.	19	Infantile Vaccination only. Three marks on left, 2 about $\frac{1}{2}$ sq. inch, 1 about $\frac{1}{4}$ sq. inch.	Patient infected from a girl said to have "chicken-pox." Discrete case.
F.	72	Said to have been vaccinated in infancy but no marks were visible.	Severe confluent. Died. Girl said to have "chicken-pox" lodged with her.
F.	34	Infantile vaccination only. Five marks all large size about $\frac{1}{2}$ sq. inch.	Discrete. Sister to girl said to have had "chicken-pox."
F.	26	Infantile vaccination only. Two marks on left arm each about $\frac{1}{2}$ sq. inch.	In coal trade. Delivers in bags. An undiagnosed Case occurred in some relations in same trade. Discrete.
M.	39	Infantile vaccination only. One mark on left arm about $\frac{1}{2}$ sq. inch.	Discrete A Chemist, might have been affected in course of trade.
M.	39	Infantile vaccination only. Four marks each about $\frac{1}{2}$ sq. inch.	Gas worker. Discrete case. Origin not traced.

It will be noted that the fatal case occurred in an old lady over 70 years of age, who was SAID to have been vaccinated in infancy, but no marks were visible. If she had ever been vaccinated she had long outgrown the protection conferred by one vaccination in early life.

Attention is also drawn to the fact that this fatal infection was derived from a young woman who suffered from small-pox in so mild a form, that a medical practitioner diagnosed her disease as chicken-pox.

Another of the cases was probably infected from a mild case in which no doctor had ever been called in, and the fifth case could not be traced to any definite source.

Macclesfield Municipal Borough.

A sporadic case of smallpox in a modified form was notified in a gas worker on May 15th. The case was seen early by a doctor, who promptly notified, and the patient was at once removed to Hospital. Re-vaccination of all susceptible persons in the household was performed, and disinfection of the house, &c., carefully carried out, with the happy result that no further case occurred.

"This case" adds the Medical Officer of Health, "concluded a series of cases in two epidemics, and having had to deal personally and closely with every patient, and having investigated all the circumstances which have determined the spread of the infection, I must record one or two convictions which have been firmly fixed in my mind.

(1) That recent successful vaccination is an absolute preventive of smallpox.

(2) That prompt isolation of the sufferer and early diagnosis is highly essential in a community only partially protected against smallpox."

Measles.— The only death from this disease in 1905 was in West Macclesfield. In 1904, it may be remembered, there were 36 deaths from this disease.

The Medical Officer of Health suggests that the first case occurring in a household might with advantage be notified. Parents and school teachers should be expected to notify the first suspicious case noticed in the house or school. More careful home isolation is needed, and notification would assist the Authority in obtaining this. At present there is much reckless disregard of the simplest precautions needed to prevent the disease spreading. It is no unusual thing to see children freely mixing with others whilst the rash of measles is still out. Careful home isolation should be continued for three weeks or a month.

As regards closure of schools, the Medical Officer of Health is fully convinced, after six years' experience, that the view held by Dr. Niven, the Medical Officer of Health for Manchester, is correct, viz.: "Unless the infant departments of schools are closed when the proportion of children suffering from measles reaches 10 per cent., the next best thing is not to close the schools at all."

So long as children under five years of age are permitted to herd together in Public Elementary Schools, so long will the education be paid for by a heavy toll of infant lives.

Macclesfield Municipal Borough.

Whooping-cough.—The 18 deaths from this disease is an exceptionally large number. All those who died were under five years old, and 16 were under one year. In 1904 the number of deaths from whooping-cough was 13.

Notwithstanding the difficulties in the way, some means of isolation will have to be found for the infected children, and some lessening of this disease may then be expected with confidence. Experience has repeatedly shown that the introduction of a case of whooping-cough into a court has resulted in the infection of practically the whole of the infant population in the court.

Scarlet Fever.—Of the 103 cases notified 6 proved fatal. There were 73 cases isolated and treated in hospital, that being 71.8 per cent.

The severity of scarlet fever is dependent, to no small extent, on the nutrition of the children attacked. Low mortality or no mortality is due to the milder character of the disease.

So far as Public Health work is concerned, it is important to note that scarlet fever is a disease capable of assuming a more malignant aspect than it now presents, and of causing a high mortality. It must be remembered that scarlet fever, like measles, is liable to leave formidable sequelæ of a permanent character. The most important of these, ear disease, may lead to deafness or fatal brain disease, and heart disease.

Untraced cases of scarlet fever have been shown to have a closer connection with defective closets than other common zymotic diseases, except perhaps enteric fever. It is probable that the urine of a scarlet fever patient contains this specific organism from a comparatively early period. It appears also that the micro-organism of scarlet fever has the property of multiplying in milk.

The improvements which have taken place in recent years in the disposal of excreta, may possibly serve to explain in some measure the great reduction in the fatality of scarlet fever.

Diphtheria and Membranous Croup.—Taking these as representing one disease the number of cases notified in 1905 was 14, and 6 proved fatal.

5 cases occurred in houses with clean water closets.
1 case ,, ,, a house ,, waste water closet.
8 cases ,, ,, houses ,, privy middens.
Of these—3 were wet and offensive or defective.
3 were offensive.

Macclesfield Municipal Borough.

The Medical Officer of Health points out that the symptoms of this disease are caused by a specific poison (toxin), and that diphtheria antitoxin neutralises this poison, and prevents it from harming the vital structures, but it does not repair any harm which the toxin may have done. Thus, one of the most essential requirements in connection with diphtheria is the early injection of antitoxin, a supply of which is always kept at the Isolation Hospital.

No doubt a large number of cases notified are not true diphtheria but cases of follicular tonsillitus, ordinary quinsy, or other forms of septic sore throat. Bacteriological examination should be made in all cases to verify the diagnosis. The Sanitary Authority recognise that it is their duty and privilege to provide for the bacteriological investigation of supposed diphtheria cases free of charge to the doctor and patient, and outfits are accordingly supplied to be used for taking samples of morbid material and transmitting them to the Laboratory of the Lister Institute of Preventive Medicine.

The term membranous croup should be omitted from the list of notifiable diseases, as probably all cases of membranous croup are really diphtheria, and should be known by that name. The Medical Officer of Health concludes by calling attention to the wisdom of administering antitoxin to those exposed to infection from diphtheria. In most cases 2,000 units would serve to render a person immune for a few weeks.

Bacteriological Examinations.—Nineteen specimens were sent to the Lister Institute during 1905.

In 5 specimens the diphtheria bacillus was found, the pseudo diphtheria bacillus was also present in one of these.

In 2 specimens, including the one just mentioned, the pseudo diphtheria bacillus was found.

In 12 specimens the diphtheria bacillus was not found.

In one instance two specimens were taken from the same patient, one from the throat, the other from the nose. The diphtheria bacillus was found in the specimen taken from the nose, but not in the one taken from the throat.

Three consecutive failures to find the diphtheria bacillus are required before any importance attaches to the result.

Every case of sore throat should be regarded as possible diphtheria until there is good evidence that it is not. As regards

the pseudo diphtheria bacillus, it is safe to regard any patient who has these bacilli as infectious, but he should not on this account be sent into a diphtheria ward, unless protected by a full dose of diphtheria antitoxin.

Enteric Fever.—The 13 cases of this disease notified in 1905 all terminated in recovery. In 1904 there were 12 cases, 2 of which proved fatal. Not one of the cases was removed to Hospital. Twelve is the smallest number of cases that have been notified for a number of years. The Medical Officer of Health is of opinion that the decline in enteric fever is in some extent due to the reduction of privy middens in the Borough. Six cases were notified from Parkside Asylum in 1904, and 2 cases in 1905. These were carefully investigated and samples of the water-supply were submitted for bacteriological examination, but the outbreak was not explained. There is, however, in all large Asylums, "a certain amount of Asylum dysentery" constantly present, and it is possible to conjecture that under certain conditions, the bacillus coli or other closely allied organism, may give rise to a disease clinically indistinguishable from enteric fever. It seems probable that this disease is most frequently conveyed to those in personal contact with patients by means of polluted hands. The only way of preventing this is by the exercise of the most rigid cleanliness by nurses and all who minister to the sick.

On receiving notification of a case of enteric fever, a pail, and an abundant supply of disinfectants are sent to the house, with instructions that all excreta from the patient are to be put in the pail, which is frequently emptied, and thoroughly cleansed. However, all these precautions are of little use if there is delay in notifying, and the midden gets infected. In such cases the midden is ordered to be carefully emptied, the walls and the floor scraped, and thoroughly saturated with chlorinated lime-wash. In some cases, when the midden is old and dilapidated, and resembles a huge cavern with many recesses, cleansing and disinfecting it adequately seems almost impossible.

The one outstanding fact in most of these cases is the presence near the dwelling of an accumulation of putrifying human excreta contained in a pit called an ashpit. The ashpits (!) harbour and breed flies, to which may reasonably be assigned an important part in the spread of infection.

Bacteriological Diagnosis.—The Health Committee provide, free of cost, to all Medical Practitioners in the Borough, complete outfits for taking specimens of blood serum from persons suspected of having enteric fever, and swabs from the throats of

persons suspected of having diphtheria. Practitioners are thus enabled to abridge as far as possible the period of doubtful diagnosis. Of course, specimens from throats should be taken before an antiseptic preparation has been applied.

Eighteen specimens were sent to the Lister Institute for examination in 1905. The specimens were all from suspected cases of enteric fever.

In 3 a complete reaction was obtained.
„ 5 a marked „ „ „
„ 1 a feeble „ „ „
„ 9 no reaction was obtained.

The Institute now examine the blood against para-typhoid organisms of two strains. It thus renders the value of this test to the general practitioner much greater, as he has a means of diagnosing certainly typhoid fever from para-typhoid, with which it has doubtless been confounded in the past. Many of the milder cases of supposed typhoid fever being really infection with the para-typhoid group of bacilli.

Influenza.—Under this heading are included deaths due to true epidemic influenza, as distinguished from deaths due to ordinary influenza, cold, or catarrhal fever. The number recorded in 1905 was 11, but probably this figure does not represent all the deaths for which influenza is responsible, many such deaths in aged persons being assigned to pneumonia, heart disease, etc.

To prevent the spread of this disease, which is extremely infectious, strict isolation of the sufferers is essential, as well as careful disinfection of the sputum and nasal discharges. The disease seems specially fatal to the aged, who should therefore be most carefully protected from infection. After the recovery or death of a patient, his rooms and clothing need disinfecting.

Elementary Schools.—There are 16 Elementary Schools in the Borough. The average number of scholars attending these schools appears to be about 5,300.

During the year 1904 the Medical Officer of Health was invited to meet a Committee of the Education Authority, to confer on the measures which should be taken to prevent the spread of measles and whooping cough amongst the scholars, and it was decided that the head teachers should be asked to notify, on forms specially provided, the names and addresses of any scholars who appeared to be suffering from, or threatened with attack by these diseases.

Macclesfield Municipal Borough.

The notification asked for was given to some extent. If systematically and promptly done, it will supply the Medical Officer of Health with most valuable information, on which he can advise the Sanitary Authority to Act.

Unless all suspected cases are notified promptly, very little benefit will result.

School Closure.—About the middle of November scarlet fever became epidemic and particularly attacked the Scholars of Duke Street School, so that it was deemed advisable to close the School for 14 days from November 26th, as the disease continued to spread and several schools were attacked, it was decided to close the whole of the Public Elementary Schools in the Borough from December 8th, till after the Christmas holidays. Broken Cross School which was outside the zone of infection, was excluded. In addition the Sunday School authorities were requested to assist the Health Committee by closing the Sunday Schools for all scholars under 14 years of age. The result was a marked diminution in the number of cases notified. In several instances the Medical Officer of Health on visiting the schools, found children attending whose hands and feet were "peeling" freely, from whom he got a clear history of having been ill at home for a few days, about a fortnight previously.

Scarlet fever is nowadays in so many cases such a mild disease that it passes recognition and no doctor is called in, the child is sick, has a sore throat, for a few days, is a little feverish, and after the lapse of about a week is back in school again a little paler and washed out looking, and spreading the disease broadcast, perhaps to children who will develop it in a severe and fatal form. It rests with the teachers to recognise these cases and to promptly seek medical assistance. The Medical Officer of Health is always willing and anxious to help any teacher by advice on these cases, and there is no excuse for not calling in his help before the disease has attacked half the school.

The Medical Officer of Health is of opinion that all teachers should have a course of demonstrations on the signs and symptoms of the infectious diseases so that they may recognise them at the outset. Periodical medical inspections at least once a quarter of all the schools would do much to check the spread of disease and save many children's lives.

Erysipelas.—Thirty-six cases of this disease were notified, of which 3 proved fatal.

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It is questionable whether much advantage results to the community from the notification of erysipelas. Many of the notified cases in the Borough are inflamed wounds, or cases of facial erysipelas. A few are cases of infected osteo-myelitis. Others are lymphangitis and adenitis, due to infection of minute wounds. Others again are cases of phlebitis. When such cases are notified there is little or nothing which the Medical Officer of Health can do except to attempt disinfection, which in the majority of these cases is quite unnecessary. The sole advantage of notifying erysipelas appears to be when there is a parturient woman or one approaching confinement in the house. In such a case the Medical Officer of Health may be able to prevent the spread of infection. However, there is in most towns no available accommodation for the isolation of a woman under such circumstances.

Puerperal Fever.—Five cases were notified, but not one appears to have been fatal.

The great control which will be exercised in future over midwives, and the great cleanliness which will be ensured, cannot fail to reduce the number of cases of puerperal fever, and the mortality therefrom. At present the disease is very irregularly notified, and it is certainly of more frequent occurrence among those who, from poverty or otherwise, are without skilled medical attendance and good nursing It thus happens that numbers of cases are never seen by a Medical Practitioner, and in many instances the Medical Officer of Health knows nothing about them, till the Registrar sends him a record of the death of the patient.

In Macclesfield the Medical Officer of Health on receiving a notification of puerperal fever, at once enquires into the case, and visits the midwife, requiring her to discontinue practice till she has submitted herself and her appliances to cleansing and disinfection. This is done at the Isolation Hospital. No difficulty has been found in getting infected midwives to submit to the process prescribed.

Probably an increased amount of infection will be discovered henceforward, as a certified midwife will be required to notify to the Local Supervising Authority any case which she is attending, where, after delivery the temperature rises to 100.4 Fah., with quickening of the pulse, for more than 24 hours.

Tuberculosis.—There were 41 deaths from phthisis and 25 deaths from other forms of tubercular disease. The 25 deaths include 4 from tabes mesenterica, 7 from tubercular meningitis, and 14 ascribed simply to "tuberculosis." Thus, in 1905, the

mortality from phthisis was equal to 1.18 per 1,000 living, and the mortality from all forms of tuberculosis was equal to 1.9 per 1,000 living. In 1904 the mortality from phthisis was equal to 1.3 per 1,000 living, and the mortality from all forms of tubercular disease was equal to 2.2 per 1,000 living. These figures are fairly high. However, the Medical Officer of Health does not think that they represent the whole of the deaths from tuberculosis. He is convinced that many cases of so called bronchitis are really tubercular in origin.

Voluntary Notification of Phthisis.—The Medical Officer of Health has a high opinion of voluntary notification in throwing light on the incident mode of spreading of tuberculosis. The difficulties in the way of taking steps to prevent infection spreading are enormous, owing to (1) the incubation period of phthisis, averaging from 12 to 18 months, and (2) the average length of life from the first manifestation of the disease being from 3 to 4 years. Patients are occasionally encouraged to remain in the factory or workshop, when they are freely expectorating tubercle bacilli, on the plea that the patient has to earn her living. This is not fair to the sufferer, and certainly not to the fellow work-mates. An open-air occupation of a light nature is the only rational form of occupation for a consumptive, and so employed he will be able to continue earning wages for a much longer period than if employed within doors. Again, on economic grounds, a consumptive man or woman should be removed from close contact with others in a hot factory or workshop The serious problem will have to be faced by Sanitary Authorities of how to provide for consumptives. Sanatoria are needed, or open-air colonies. Several Authorities might combine for the purpose of providing a suitable sanatorium.

The two most common sources of infection are a consumptive relative, or a consumptive workmate, and the conditions under which infection is most likely to be spread are such as are obtained in houses which are dark, dirty, damp, the back-yards of which are badly paved, and where overcrowding is not infrequent ; intemperate habits also undoubtedly weaken the body, and render it more liable to be infected.

Action taken to prevent the spread of Phthisis.—The action which has been taken may be summarised as follows :—

(1) Cards have been printed and distributed warning persons against indiscriminate spitting.

(2) A Bye-law has been passed imposing a penalty on any person who shall spit on the floors, side, or

wall of any public carriage, or of any public hall, public waiting room, or place of public entertainment.

(3) The Ladies' Public Health Society have had a leaflet printed, giving instructions for consumptives and those in charge of them.

(4) The officials of the Health Department have arranged for the disinfection of any house or clothing used by consumptives on request.

If the spread of phthisis is to be effectively dealt with, notification must be systematic and regular, and contaminated houses and clothing must be thoroughly disinfected.

Again it must be borne in mind that to properly combat the infectiousness of a consumptive patient involves combating that infectiousness during the whole period of infection. The most important preventive measure is thorough disinfection of the expectoration or other discharges from persons suffering from the various manifestations of the disease. The patient should be impressed with the fact that he is a possible source of infection to others, and that it is quite within his power to control the spread of the disease from himself by attention to a few simple details that will in no way interfere with his comfort. If he be suffering from Pulmonary Consumption, the expectoration should be spat into covered vessels containing a disinfectant fluid, or into handkerchiefs that are afterwards disinfected. There are various other details that require attention, such as the scalding of bedclothing soiled by tuberculous sputum; he should be provided with his own eating utensils, etc., to be used by him alone, and these should be scalded immediately after use. Scrupulous cleanliness is required in the living and bedroom; and under no circumstances should spitting be permitted.

"Dusting" should not be practised, but all cleansing should be effected by a cloth moistened with a disinfectant.

For the effective carrying out of compulsory disinfection all medical men practising in the town should be provided with a form of certificate, which they should be requested to fill in on the termination of an illness, or the removal of a patient suffering from any infectious form of tuberculosis.

Examination of the Sputum of Consumptives.—Specimens of sputum are sent by the Medical Officer of Health (for Medical Practitioners) to the Lister Institute for examination, to see if the bacillus of tuberculosis is present. Several

specimens should be sent, before a negative opinion as regards the case can be given.

Diarrhœa.—By this term is meant those acute specific attacks of illness in which diarrhœa is the most prominent symptom, which occur in persons of all ages, but especially in infants and young children, towards the middle or close of a hot dry summer. The enfeebled in health appear to be especially liable to this disease, the immediate cause often being the consumption of tainted food or impure water. The presence or absence of diarrhœa in a community, as a cause of death, indicate the sanitary or insanitary condition of a District, and thus the diarrhœa death-rate frequently serves to shew the need of more efficient sanitary supervision being exercised by the Authority.

In 1905 there were 22 deaths ascribed to diarrhœa. So large a number indicates the need of more sanitary measures in the localities where diarrhœa has most prevailed. Of those who died 15 were infants, who had not completed their first year, and 5 were between one year and five years. The deaths among children under three months old, either wholly or partially fed on artificial foods, are fifteen times as great as they are amongst an equal number of infants fed upon breast milk; e.g., investigation has tended to prove that, out of every 1,000 infants under three months old, naturally fed upon breast milk alone, 20 die of autumnal choleraic disease; but if the same number of infants, at the same age, are artificially fed, then, instead of 20 dying, as many as 300 will die from this cause. It is mainly with a view to prevent this mortality that sterilized milk depots have been established.

There is one other important matter to which reference must be made, and that is the actual nature of this choleraic diarrhœa in infants. The reasons for regarding it as caused by a specific communicable poison are its recurrence under definite conditions, and its unquestionable power of communicability from infant to infant, and indeed to other persons in the same household; these observations are so constant, and so common, as to leave no doubt upon the question.

For the reduction of the diarrhœa death-rate, the Sanitary Authority should do what can be done to secure the paving and draining of backyards, the abolition of privy-middens, and the proper ventilation of all rooms. Provision should also be made for keeping milk clean and sweet, and care should be taken that the milk is quite fresh and clean when delivered.

To do all this may be, and doubtless is, difficult, but if it could be done, it would not only diminish the diarrhœa death-rate,

but improve the physical, mental and moral condition of the people.

As flies may be the means of infecting milk and other food, these should be stored so as to protect them from flies. Greater cleanliness should be exercised, especially in regard to infants and their clothing. When any one is suffering from diarrhœa, the excreta should be disinfected.

The importance of boiling all milk previous to use should not be forgotten.

In warm weather the streets and passages should be properly watered, with a view to cleanliness, and also to cool the air. The bottle used for feeding infants should be of a kind easily cleansed, and the long rubber tube should under no circumstances be used.

Cancer.—The number of deaths from cancer was 53, i.e., 1.52 per 1,000 living. In 1904 the deaths from cancer were 37.

This disease seems to be claiming an increasing number of victims. At present the Authority is helpless to prevent its spread; however, it certainly seems desirable that rooms in which people suffering from cancer have lived and died should be cleansed and disinfected.

Disinfection.—The Medical Officer of Health has commenced using formic-aldehyde spray for the disinfection of premises. A 5 per cent. solution of formalin in water is used (formalin being a 40 per cent. solution of formic-aldehyde gas in water). Spraying appears to be a better way of disinfecting than mere ærial disinfection by sulphurous acid gas, or formalin vapour. The routine method of disinfection now is, to remove from the room all the bedding, clothing, etc., to the Thresh-disinfector, then to liberally spray the room, and afterwards to leave a formalin lamp burning in the room for some hours.

The Isolation Hospitals.—Separate provision is made for the isolation of small-pox and of other cases of infectious disease. There were in all 82 patients admitted during 1905. 6 were suffering from small-pox, 3 from diphtheria, and 73 from scarlet fever.

During the year a water main has been carried along Moss Lane up to the Small-pox Hospital. A wash-house, boiler, &c., have been erected and an abundant supply of hot and cold water can now be obtained at this hospital.

Macclesfield Municipal Borough.

During the year the Town Council, on the recommendation of the Hospital Sub-Committee and the Health Committee, agreed to reserve for the use of the Macclesfield Rural District Council, four beds in their hospital. Two beds—one male and one female—to be reserved for scarlet fever, and two beds—one male and one female—to be reserved for typhoid fever.

All the patients were professionally attended by the Medical Officer of Health, necessitating many hundreds of journeys to the Hospitals. The Medical Officer of Health receives for this £20 per annum.

The value of these hospitals lies primarily, not in the work they accomplish, but in the prevention of the spread of disease. When an infectious disease becomes seriously epidemic, it shows that the hospital has failed to carry out its primary object—the checking of its spread in the early stage.

The Medical Officer of Health has not been able to discover any "return cases," although they have been most carefully looked for. The Sanitary Authority protect themselves by giving to the child's parents or guardians a signed notice, that the Corporation will not be liable for future infection after the child's discharge from hospital.

Observation Ward and Contact Shelter.—Attention is again drawn to the need of a proper observation ward, where doubtful cases can be kept for a few days, until a decision can be given thereon.

Improved Ambulance needed.—Throughout the year 1905, as in previous years' the removal of patients was effected by means of an old "family bus," or by borrowing from the Guardians a vehicle resembling a hearse. Under such conditions patients, however ill they may be, have been taken to hospital. "In the interests of common decency, humanity, and for the credit of the Borough, a modern up-to-date ambulance is needed." The strongest objections made to the removal of patients to hospital have arisen in consequence of the miserable arrangements made for removal. A new ambulance should be obtained, and the machine now in use would be of service for the removal of infected clothing, bedding, &c., to the disinfector.

This matter is having attention, and there is reason to believe a good ambulance will be provided in 1906.

The Water=supply has been abundant and unrestricted during the whole year. Samples have been taken and submitted

to chemical and bacteriological analysis. It must always be borne in mind, when considering the relative value of these analyses, that the chemical analysis gives no indication of specific pollution, and that only the bacteriological examination actually shows the number of organisms, and their kind, present in the waters. The water submitted for examination was from three sources :—

(1.) Town's water, collected from a tap at the Town Hall, and being the water as supplied to the town generally

(2.) Hollin's Road water. This is water which has undergone a certain amount of purification by sedimentation in the Langley reservoirs ; but has not (like the town's supply) passed through the filter beds. Only a few houses receive this water.

(3.) Hurdsfield water is a private supply, which is distributed up Hurdsfield Road and to some houses in Commercial Road.

The Report received from the Lister Institute of Preventive Medicine on the examination of the 3 samples which reached the Institute on May 2nd, 1905, was as follows :—

May 10th, 1905.

Sample.	Total organisms in 1 cub. cent. growing at 20o C.	growing at 37o C.	Bacillus coli present in
"No. 1 from Tap"	33 ...	28 ...	25 c.c., not in 10 c.c
"No. 2 from Tap"	92 ...	35 ...	25 c.c., not in 10 c.c
"No. 3 from Tap"	88 ...	30 ...	10 c.c., not in 1 c.c.

The total number of organisms per cub. cent., is low and satisfactory, and the number of organisms of intestinal type which are present is not large, though sample No. 3 is suggestive of pollution as judged by this test. The proportion of the total number of organisms, however, which are capable of growth at body temperature is very high (nearly $\frac{1}{2}$ in the average), and this is extremely suggestive of undesirable contamination. The water cannot be said to be satisfactory as long as this proportion between organisms growing at 22o and at 37o remains so high.

No information was sent with the samples as to the source and treatment (filtration, etc.), of the water; if, as the numbers suggest, the water is filtered, the process is fairly successful.

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The Report from the Borough Analyst was as follows :—

May 9th, 1905.

These three waters are free from odour or taste. They are neutral. No poisonous metals were present.

On the whole these samples are better than those of last year, showing chemically a higher degree of purity.

As representing a water-supply they are all of excellent quality and suitable for all domestic purposes.

Refuse Removal.—The major part of the night-soil and dry-ash refuse is deposited in the Dane Moss tip, and a certain quantity is sold to farmers. The danger of all tips in the neighbourhood of towns is, that as the area of a town increases, these muck-heaps often become the sites for building, long before natural agencies have succeeded in purifying the "made soil." The contents of the dust-bins and dry-ash pails are removed once a week. A more frequent removal is needed during the summer months, particularly in the more congested parts of the town.

The number of loads of night-soil removed, and the cost of removing it in the twelve years, 1894-1905, is as follows :—

Year.	No. of Loads.	Expenditure. £	s.	d.
1894 ...	12,733 ...	1,714	15	8
1895 ...	12,289 ...	1,652	6	8
1896 ...	12,407 ...	1,807	12	6
1897 ...	13,283 ...	2,006	2	3
1898 ...	13,619 ...	2,104	2	4
1899 ...	13,040 ...	2,169	16	10
1900 ...	12,057 ...	2,093	10	0
1901 ...	11,215 ...	2,425	14	2
1902 ...	12,532 ...	2,334	10	9
1903 ...	11,912 ...	2,260	10	5
1904 ...	10,371 ...	1,999	6	4
1905 ...	11,082 ...	1,895	3	5

The expenditure includes the cost of the Dane Moss Farm.

Numerous and repeated complaints having been received during 1904, as to the unsatisfactory way in which privy-middens were emptied, the Sewage and Night-soil Sub-Committee resolved to offer the work for tender. A tender to empty and cleanse privies and ashpits for three years from October 1st for £500 per annum, and to cart night-soil, offal and other refuse from the Borough for £676 per annum was accepted. The Medical Officer

of Health expresses his opinion that, from a sanitary point of view, it is most unsatisfactory to do this work by contract.

Any complaints with reference to the way this work is done are investigated by the Sanitary Inspector.

Privy-middens and their abolition.—During 1905 there were 165 privy-middens converted into water-closets. The following tabular statement shews that the number of water-closets in the town is being annually increased, but it also shews the large proportion of houses in the Borough at which the sole sanitary accommodation provided is the privy-midden.

Year.	No. of Privy Closets.	No. of Waste-water Closets.	No. of Clean-water Closets.
1897	4,319	260	674
1898	4,157	301	710
1899	3,942	309	815
1900	3,862	309	940
1901	3,825	309	1,038
1902	3,705	309	1,205
1903	3,569	309	1,378
1904	3,387	309	1,628
1905	3,222	309	1,838

At the present rate of progress it will take over a quarter of a century before the last of the privy-middens is abolished.

During the year 1904 an effort was made to oppose the policy of substituting water-closets for privy-middens, and strong opposition was brought to bear in a case which was taken before the magistrates, the opposers being principally interested property owners, and their tenants. Several persons were produced as witnesses for the defence, who swore that a large privy-midden, which served a common lodging-house and some other dwelling-houses, situated in a confined back-yard, was not a nuisance. However, the Magistrates found that it was a nuisance, and ordered it to be removed and water-closets substituted. This has been done, greatly to the improvement of the neighbourhood, and to the satisfaction of the people who actually opposed the change.

Since this case was decided there has been much less opposition from property owners.

New Houses.—Plans for 31 new dwelling houses were passed in 1905.

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Houses Unfit for Habitation.—At a Meeting of the Health Committee, held on July 20th, the Committee, having considered the report of the Sub-Committee of the 14th instant, and of the Inspector, now read, and it appearing to them that the undermentioned premises, viz.:—

Court 15, Bank Street.

were in a state so dangerous and injurious to health as to be unfit for human habitation, it was resolved that the report be approved, and that proceedings be taken against the owner for closing the said premises under the Housing of the Working Classes Act, 1890, and further it was resolved that the Town Clerk be instructed to take the necessary proceedings before the Magistrates for the closing of the following premises:—

No. 16 Derby Street.
Nos. 1, 2, 3, 4, 5, 6 and 7 Court, 2 Derby Street.
Nos. 1 and 2 Court, 4 Derby Street.
No. 2 Court, 1 Newgate.

as being unfit for human habitation.

Sewering.—During 1905 the following streets were sewered:—

1. Short length of Main Sewer in Charlotte Street.
2. Bunkers Hill and Hawthorn Street Sewer.
3. Sewer from Wharfe Street, Hurdsfield, to drain Mr. Caleb Oldfield's property.
4. Duke Street (Macclesfield) Main Sewer.
5. St. George's Street Sewer, Park Street to St. George's Place.

The Sewage Disposal Works.—During 1904 a Local Government Board Inquiry was held with reference to an application of the Town Council for sanction to borrow £14,000, for alterations and extensions at the Sewage Disposal Works at Butley, and sanction was obtained. This important work was commenced in August, 1904, and good progress has since been made with it.

Common Lodging-houses.—During 1905 there were 426 visits of inspection paid to these houses. There are 8 houses on the Register. The number of nightly lodgers accommodated during the year was 32,579. Generally speaking, the houses have been well-conducted. One house is not well kept, but this is mainly due to the old age

and infirmity of the keeper and his wife. During 1904, two lodging-house keepers died and their successors have not yet been appointed.

No steps have been taken to provide a Municipal Common Lodging-house, although one is much needed.

Factory and Workshop Act, 1901.—This Act came into force on January 1st, 1902. The Medical Officer of Health does not consider the provisions of the Act are as fully carried out as they should be, and is of opinion that this may be due to the fact that the Town Council have not yet, by resolution, definitely deputed anyone to carry out the sanitary provisions of the Act. The Sanitary Inspector has made 144 visits of inspection to Factories and Workshops during 1905, but this, as is pointed out, cannot be sufficient sanitary supervision.

There are in the Borough 136 workshops all duly registered. As the result of inspection 4 premises were found in an uncleanly condition, 1 was in a state so bad as to be a nuisance, in 3 the sanitary accommodation was unsuitable or defective. At one factory the sanitary accommodation was not separate for sexes. All these defects were remedied without prosecution of owners.

Dairies, Cowsheds and Milkshops.—There are 71 persons registered as cowkeepers or milksellers in the Borough. All have been visited to see that their premises are kept in a cleanly state, and periodically whitewashed. The register is to be revised in 1906.

Slaughter-houses.—There are 22 slaughter-houses and premises used for tripe-dressing in the Borough, all under regular inspection. During the year the drainage of two slaughter-houses has been repaired and improved.

Unsound Meat.—During 1905 no unsound meat was found exposed for sale or deposited for sale. There were 1,240 lbs. of beef, 75 lbs. of mutton, 20 lbs. of veal, 12 lbs. of fish, and 8 lbs. of tripe, submitted for inspection and destroyed. Fifty lbs. of veal were submitted for inspection and passed. There were also 64 carcases of pigs submitted for inspection, of which 13 were found to be diseased, and destroyed.

Sale of Foods and Drugs Act.—A large number of samples were taken for analysis in 1905, they were as

follows:—35 milk, 16 butter, 12 cheese, 10 lard, 10 brandy, 9 coffee, 6 white pepper, 3 bread, and 3 vinegar. One sample of milk was found to be deficient in fat (20 per cent.), and the vendor was fined 10s. and costs. Two samples of milk were found slightly deficient in fats, and vendors were warned. A sample of lard and a sample of pepper were found to be "poor," and the vendors were warned. Two samples of butter were found to be adulterated, and the vendor was fined £3 and costs. Six samples of brandy were found to be adulterated with silent spirit, but owing to the indefiniteness of the law as to what is brandy, there was no prosecution.

Nuisance Abatement.—Mr. William Jenkins, the Sanitary Inspector, reports fully on matters coming within his department. His Report on nuisance abatement shows that much useful work has been done. In all 756 nuisances were satisfactorily abated, and to effect this, 142 Statutory Notices were served on owners, and 614 Preliminary Notices were written, besides 280 interviews with agents, etc. Four persons were summoned before the Magistrates. Three in respect for closing Orders, for houses unfit for human habitation, and one for refusing to abate a nuisance. The Orders asked for were obtained in each case.

The windows of 61 houses have been caused to be altered to improve the ventilation.

Six cases of overcrowding have been satisfactorily abated, and the tenants of 52 houses made to cleanse their houses, bedding, etc. The tenant of a two-roomed house, a man, was found with no less than ten cats, which he kept in the house the greater part of the day and night. When first visited the cats had been shut up in the house for some hours. He was made to dispose of nine of the cats and to cleanse the house throughout.

Canal Boats.—The Inspector inspected 67 boats, 43 of which complied with the requirements of the Acts and the regulations made thereunder. On 4 boats there was no certificate of registration. One certificate did not identify the boat with the owner. On two boats the mark was obliterated, one boat was overcrowded, 3 had dirty cabins, 2 were dilapidated, and 8 boats were without proper water-vessels.

The Boats were registered to accommodate 209 adults; there were occupying 129 males, 10 females, and 4 children.

STALYBRIDGE

Municipal Borough.

Medical Officer of Health to July 2nd—Dr. F. J. Roberts-Dudley.
Medical Officer of Health from July 16th—Dr. W. J. Hancock.
Population at Census on April 1st, 1901—27,673.
Estimated Population in middle of 1905—28,636.
Area in acres—3,130.
Birth-rate per 1,000 living—24.8.
Death-rate per 1,000 living—17.0.
Death-rate from seven principal Zymotic Diseases—1.3.
Deaths under one year to 1,000 births—177.

This Borough is divided into four Wards, the population of which, as enumerated at the Census in 1901, was as follows :—

Dukinfield Ward	...	...	7,907
Lancashire Ward	...	...	5,983
Millbrook Ward	...	...	4,039
Staley Ward	...	...	9,744

The population was 26,783 at the Census in 1891, and 27,673 at the Census in 1901. The increase in the population during the decennium 1891-1901 was thus 890, that is 3.3 per cent. The estimate of the population made for the middle of the year 1905 is 28,636.

The births registered in the Borough during the year 1905 numbered 742, and the deaths of persons belonging to the Borough in the same year numbered 489. The deaths include those of residents which took place in the Workhouse, at Ashton-under-Lyne, the Infirmary, and the Ashton under-Lyne Borough Hospital. The birth-rate is 1.3 below the average in the ten years 1895-1904, and the death-rate is 4.3 below the average in the same ten years.

The birth rates and death-rates in the four wards were as follows :—

		Birth Rate.			Death Rate.
Lancashire Ward	...	25.4	...	...	16.5
Staley ,,	...	22.3	..	...	15.2
Dukinfield ,,	...	29.0	...	...	21.1
Millbrook ,,	...	21.2	...	...	14.2

There were 37 deaths from the principal zymotic diseases viz :—9 measles, 2 scarlet fever, 11 whooping cough, 6 diphtheria and membranous croup, 4 enteric fever, and 5 diarrhœa. There

were 16 deaths from enteritis, 2 from puerperal fever, 1 from septic disease, 27 from phthisis, 9 from other tubercular diseases, 23 from cancer, 62 from bronchitis, 43 from pneumonia, 1 from pleurisy, 5 from other diseases of the respiratory organs, 5 from alcoholism or cirrhosis of the liver, 13 from premature birth, 3 from diseases and accidents of parturition, 44 from heart diseases, 6 from accidents, and 3 from suicide.

Mortality of Infants.—Among those who died in 1905, 126 were infants under 1 year of age: this is equal to 177 per 1,000 births. In 1904 the proportion of infants who died was equal to 210 per 1,000 births. The proportion in the Borough during the 10 years 1895—1904 was 212 per 1,000 births. The number of deaths of infants under a year old to each 1,000 births registered in 1905, in the four Wards of the Borough, in 1905 and 1904, were as follows:—

	1905	1904
Lancashire Ward	134 ...	210
Staley ,, ...	182 ...	234
Dukinfield ,, ...	192 ...	201
Millbrook ,, ...	149 ...	100

Marasmus (wasting), convulsions, and diarrhœa and enteritis account for most of the deaths of infants under the age of 1 year, and next to these causes we find bronchitis and pneumonia adding heavily to the list.

These causes tell their own tale, the one set being mainly dependent upon improper feeding, the other upon exposure to cold.

In a district like Stalybridge it is difficult to counteract these causes, for in many instances the mother must needs go out to the mill or elsewhere in order to assist in maintaining the family. The infant is then brought up on artificial foods of great variety, and frequently ill-prepared, and in many cases it is taken from a warm bed and carried through the morning air to its guardian for the day, only to be brought home again when the day's work is over.

A few years ago a leaflet of "Instructions upon the Feeding and Management of Infants" was issued by the Sanitary Committee and distributed by the Registrar whenever a birth was registered, and public attention has on several occasions been called to the matter at the meetings of the Council.

Stalybridge Municipal Borough.

The Medical Officer of Health is convinced that it is only by getting parents and guardians to recognise their grave responsibilities, and the extreme care which an infant needs during its first year of life, that the fatal diseases associated with infancy can be warded off or remedied.

Infectious Disease notified.—There were 144 cases of infectious disease notified, viz. :—11 small-pox, 4 diphtheria, 6 membranous croup, 82 scarlet fever, 16 enteric fever, 2 puerperal fever, and 23 erysipelas.

The compulsory notification of cases of infectious disease has given serviceable direction to much of the work of general inspection in the Borough. All premises in which cases of infectious disease are reported are at once visited by the Medical Officer of Health and Inspector of Nuisances, and many sanitary defects are thus discovered and remedied. The 11 cases of small-pox and 2 of the cases of enteric fever were isolated in Hospital.

All practical precautions are taken to prevent the spread of the disease.

Whenever it is advisable, the Librarian is informed, so that the issue of books to the infected family may be temporarily stopped, and any books which have become contaminated are taken by the Sanitary Inspector and destroyed. Thirteen books belonging to the Library have during the year been thus destroyed and replaced at the expense of the Sanitary Committee. Heads of schools are also similarly notified, so that children from infected homes may not be admitted.

Isolation Hospital Accommodation.—There is ample accommodation for small-pox cases at the Joint Hospital Board's Hospital at Hartshead. For other cases of infectious disease, arrangements have been made with the Ashton-under-Lyne Authorities, for the admission of cases of scarlet fever and typhoid fever to their Borough Hospital for infectious diseases, at certain fixed charges.

The erection of an Isolation Hospital for cases other than small-pox at Hartshead is under consideration.

Small-pox.—Of the notified cases of small-pox, 4 occurred in January, and the remaining 7 during the last two weeks of December. The 4 cases were associated with the outbreak of 1904. The 7 cases form the subject of the following report, which was asked for by the Local Government Board :—

Stalybridge Municipal Borough.

The Chairman and Members of the Sanitary Committee.

GENTLEMEN,

On December 22nd, 1905, Mrs. N., of 119, Wakefield Road, Souracre, was found to be suffering from small-pox. She had been vaccinated in infancy, and the attack was of but a mild character.

Although careful enquiries were made as to her whereabouts during the preceding fourteen days, no information could at the time be gleaned as to how she had contracted the disease.

She was promptly removed to the Joint Board's small-pox Hospital at Hartshead, and the same evening I visited the house to re-vaccinate the inmates, when I found Allen N. (8), son of Mrs. N., in an advanced stage of the disease, while his uncle, Robert N. (brother-in-law to Mrs. N.), was just commencing with the disorder. The following morning both of them were removed to the small-pox Hospital.

The other members of the family, Mr. Wm. N. (husband), Ralph (son), and Lizzie (daughter), were at once vaccinated, the infected bedding and contaminated clothing (other than what could be disinfected and washed) were removed and destroyed, the house was thoroughly disinfected and the inmates quarantined at home and kept under close observation for the next fourteen days, with the result that no further spread of the disease took place.

A Miss H., a neighbour, who lived alone close by, and who had assisted in the house, had her clothing disinfected and washed, was herself re-vaccinated, and continued to attend to the needs of the family, though she also was kept under close observation, but developed no trace of the disease.

Mrs. N. and her son Allen were discharged from the Hospital on January 6th, 1906, and Mr. Robert N. on January 17th, 1906.

On Tuesday, December 26th, 1905, Dr Bishop informed me that Mrs. H., of 3, Shepley Street, was suffering from small-pox. With him I visited her home, and found both Mr. and Mrs. H. suffering from a mild attack of small-pox. Both of them had been vaccinated in infancy.

Only their son Edwin (8), lived with them, and he had gone an errand. We waited for his return, and at once saw that he was in an advanced siege of the disease.

All three of them were promptly taken away to the small-pox Hospital, the beds were removed and destroyed, the whole of the house was thoroughly disinfected, and charge of the house was taken by the Sanitary Inspector until the family could return.

Mrs. H. and her son were discharged on January 6th, 1906, and Mr. H. on January 11th, 1906.

In each of these two families the disease first attacked the boys, Allen and Edwin respectively, who then conveyed it to their relatives. In neither case had the parents called in a doctor, evidently considering the boys were suffering from nothing more serious than chicken-pox. Strange to say, both boys attend the same school, are in the same class, and were unvaccinated, and although I have carefully inspected the school registers and made enquiries as to other absentees about the period they were away from school, I have not been able to trace any other cases, nor can I find out how these boys contracted the disease.

During the evening of Thursday, December 28th, 1905, I was asked by Dr. McCarthy to visit, with him, 34, Spring-bank Street, where he was attending a girl Mary V. ($5\frac{3}{4}$), whom he considered was suffering from small-pox. After careful examination I fully confirmed his opinion, and had the girl removed the same evening to the small-pox Hospital.

The infected bedding was removed and destroyed, the house was thoroughly disinfected, and all the inmates were re vaccinated, and have been kept under observation until the present time, without the appear nce of any fresh case of smallpox. She was discharged from the Hospital on January 13th, 1906.

Enquiries in this case revealed the fact that this girl came with her parents and little brothers (one a baby), on Saturday, December 23rd, from Ellesmere Port to spend Christmas with relatives at Stalybridge, and she had evidently contracted the disease before coming here.

Referring now to our general mode of dealing with out-breaks of smallpox, I may say that we proceed as follows :—

1. Prompt removal of patient.
2. Vaccination or re-vaccination of contacts, who are quarantined and kept under close observation for fourteen days.

3. Removal and destruction of infected bedding, and of such articles as cannot be satisfactorily disinfected.

Here I should like to call especial attention to our urgent need of a disinfector, which would save the cost of replacing b dding and other articles, which must, under present conditions, be destroyed, and it was with extreme regret that I learned that the Local Government Board had recently struck out of our application for borrowing powers for the provision of well-equipped disinfector buildings, along with the erection of the destructor, the whole of the items connected with the disinfector buildings.

4. Notification of each outbreak to the Vaccination Officer.

5. Notification of each case to the County Medical Officer of Health.

6. Re-vaccination of any person desiring the same by any medical man in the town at the expense of the Sanitary Authority.

It is to the immediate and thorough carrying out of each and all of these proceedings that I attribute our freedom from further spread of the disease.

I am, gentlemen,
Your obedient servant,
WILLIAM J. HANCOCK.

Jan. 18th, 1906.

Enteric (or Typhoid) Fever.—Four of the 16 cases notified proved fatal. The Medical Officer of Health believes that infection is most frequently conveyed by the air or by flies, from foul privy-ashpits which exist throughout the town. These are gradually being replaced by water-closets, and receptacles for garbage and ashes, which are frequently and regularly emptied.

Diseases of the Lungs.—Phthisis caused 27 deaths, which was equal to a death-rate of 0.95 per 1000 living. The deaths from other diseases of the lungs number 111. Phthisis is distinctly an infectious disease, and with the object of preventing its being conveyed from one person to another, the Sanitary Committee caused a handbill to be issued dealing with the disposal of the sputum, and advising the disinfection of apartments which had been occupied by consumptives. This handbill has been widely distributed, and copies have been printed on cardboard and put up in mills and workshops.

Cancer, which is a disease even more serious than phthisis, caused 23 deaths, a number equal to 0.8 per 1000 living.

Midwives Act, 1902.—Since April 1st, 1905, no woman has been entitled to use the name or description of "midwife" unless she has a certificate from the Central Midwives' Board. In this Borough 23 women obtained this certificate. Three of these were fully trained, 3 partially trained, while the others were entitled to their certificate through having been in practice in July, 1901. A few are not intelligent and capable, but the rest belong to a good type of midwife, and are rendering useful service to the poor.

One woman was found to be directly engaged in an undertaking business, another was agent for a firm of undertakers, and some others were in the habit of laying out the dead. All these were cautioned, and told that they must cease to have anything to do with laying out bodies, etc. They promised to confirm to the rules.

The Infectious Disease (Prevention) Act, 1890, is in force in the Borough, having been adopted in July, 1891.

Water-supply.—The water-supply of the Borough is satisfactory. Along with the neighbouring Boroughs of Ashton-under-Lyne, Dukinfield, and Mossley, Stalybridge is well supplied with an abundance of pure water from extensive reservoirs, which have a holding capacity of close upon 900,000,000 gallons.

Factory and Workshop Act.—There are in the Borough 56 factories, all of which are well ventilated, and, with two exceptions, are now efficiently provided with means of escape from fire. Several of them have during the year added to their sanitary conveniences and put them in a satisfactory condition, but there are still a few of the older factories where the sanitary conveniences are in a very unsatisfactory state, and these will shortly be dealt with.

As regards the workshops, of which there are at present 152 on the register, several of these have received the attention of the Sanitary Inspector for such matters as want of ventilation, want of lime-washing, and general cleanliness, omission to affix Abstract, insufficient sanitary accommodation, and other minor defects.

Most of the bakehouses are in good condition, and not one is underground. The immediate vicinity of some bakehouses is in bad condition, but this will have attention. In one instance

the surroundings of the bakehouse were so bad that a formal notice had to be served on the owner to remedy the defects.

Inspection.—The Medical Officer of Health makes visits of inspection from time to time, being often accompanied by the Inspector of Nuisances.

Common Lodging Houses.—These are frequently inspected, and are kept in a clean and fairly sanitary condition. Lists of the inmates are supplied to the Medical Officer of Health weekly by the keepers.

Report of Inspector of Nuisances.—The Inspector gives the following summary, shewing the nature of the nuisances dealt with by him during 1905.

Wet and Insanitary Ashpits	61
Ashpits and Closets Dilapidated	6
Drains Blocked	33
Closets Blocked	20
Defective Drains	20
Defective Ashtubs	2
Defective Closets and Water Closets	8
Insufficient Closet and Ashtub Accommodation	5
Leaky Closet Pails	1
Stagnant Water in Cellars	8
Accumulation of Manure and other refuse ...	7
Keeping of Animals, Fowls and Pigeons .	8
Defective Paving in Yard	1
Defective Downspout	1
Houses in Damp Condition	3
Dirty Privies	28
Full Ashpits	291
Number of smoke observations...	90
Number of notices served	16
Number of canal boats inspected	21
Number of notices served	2
Number of houses fumigated	106
Number of infectious disease inquiries... ...	132

Refuse removal.—During 1905 the number of loads of ashpit refuse removed was 7,236. The number of emptyings of ashpits was 5,635, and the number of emptyings of ashbins was 29,663. This work is supervised by the Inspector.

Provision of a Destructor.—During 1903 the Sanitary Committee had under consideration the provision of a destructor, and in October the Town Council unanimously agreed to the recommendation of the Committee to accept a tender to erect one.

The necessary plans, specifications, etc., are now prepared, and the Local Government Board have approved them.

Proposed Disinfecting House.—The Sanitary Committee have also decided to erect a small house to contain a steam disinfector and bathroom, to give facilities for the thorough disinfection of persons who have been exposed to any infectious disease, and of their clothing. Delay has been caused in this matter also.

Milkshops.—The milkshops within the Borough number 41. These have been registered during the year and consist chiefly of small shops where grocery and general goods are retailed.

The quantities of milk sold by these retailers are from one quart to eight or nine quarts per day. In fact some of the shop-keepers only keep a small supply to provide their general customers as a matter of convenience.

The milk vessels are, as a general rule, placed on the counter or in other convenient place in the shop and are found to be kept in a clean state.

Slaughter-houses.—There are 19 slaughter–houses within the Borough, seven of which have been licensed since the "Public Health Amendment Act, 1890" came into force, and these have the licenses renewed annually The other twelve are licensed as required by the "Public Health Act, 1875."

The whole of the premises have been inspected from time to time during the year, and recently copies of the Bye-laws have been distributed, and the occupiers called upon to affix the same in the slaughter-house.

Several of these premises are not of an entirely satisfactory character, but, taken as a whole, they are kept in as clean and sanitary a state as circumstances at present permit.

Offensive Trades.—The one offensive trade, as scheduled under "The Public Health Act, 1875," existing within the Borough is that of tripe boiling.

Much has been done during recent years in localising this trade to a suitable and central site in the town, which permits of ready inspection, and where special intercepting grease-traps have been constructed between the drains from the premises and the public sewer.

The trade, generally speaking, is carried on with a minimum of nuisance, and the premises are kept clean, well ventilated, well lighted, and frequently white-washed.

Stalybridge Municipal Borough.

Canal Boats.—The Inspector, Mr. W. J. Bradbury, has during 1905 inspected 21 boats. Eighteen of then were used and registered for sleeping accommodation. The other three were registered, but were used only as "change boats." The 18 boats were occupied by 36 men, all of whom appeared healthy. There were no women or children on board the boats. Generally the boats were in good order and condition, but one boat did not carry a certificate, and another needed painting.

Temperature and Rainfall.—The Medical Officer of Health submits the following tabular statement, showing the mean temperature and depth of rainfall during each month in the year. The results were recorded at Stalybridge :—

1905.	Temperature.		Rainfall. 12 inches above ground.
	Maximum in Shade.	Minimum in Shade.	
January	42	34	2.170
February	44	35	1.840
March	50	37	4.170
April	49	36	2.140
May	60	42	0.880
June	66.5	49	3.680
July	71	54	2.480
August	65	51	4.220
September	59	47	2.370
October	50	36	3.240
November	46	36	2.660
December	45	37	1.020
			30.800

ALDERLEY EDGE

Urban District.

Medical Officer of Health—Dr. G. W. Dowling.
Population at Census on April 1st, 1901—2856.
Estimated Population in middle of 1905—3,000.
Area in acres—599.
Birth-rate per 1,000 living—20.0.
Death-rate per 1,000 living—11.3.
Death-rate from seven principal Zymotic Diseases—0.3.
Deaths under one year to 1,000 births—16.

The Urban District of Alderley Edge was formed by Local Government Board Orders, which came into operation on September 5th, 1894, and September 30th, 1895, respectively. The Urban District of Chorley was renamed Alderley Edge, and extended to include a further part of the Civil Parish of Chorley, the part of that parish within the Urban District, being renamed Alderley Edge by a County Council Naming Order.

The population of this Urban District was 2,856 at the Census, in 1901, and the population of the same area was 2,281 at the Census in 1891. The increase in the population during the decennium 1891-1901 was thus 575, that is 25.2 per cent. The estimate of the population made for the middle of the year 1905 is thus not too high.

During 1905 the number of births registered was 60, and the number of deaths registered (including the death of a resident registered elsewhere) was 34. The birth-rate is about 0.7 below the average birth-rate in Alderley Edge in 1895-1904, and the death-rate is about 0.2 below the average death-rate in Alderley Edge in the same 10 years.

Only one of those who died was an infant under a year old, and 17 were persons upwards of 65 years old.

One death was due to diphtheria, 3 deaths were due to phthisis or other tubercular disease, 3 were due to cancer, and 8 to heart diseases.

Infectious Disease Notified.—There were 53 cases of infectious disease notified, viz :—34 measles, 9 diphtheria, 4 scarlet fever, and 6 erysipelas. Of these, 7 cases of diphtheria and 2 cases of scarlet fever, were isolated in Hospital at Baguley.

Measles has been notifiable in this District since 1893. During 1905 a few of the cases were severe, but the type of the disease was mild.

Alderley Edge Urban District.

Whooping-cough.—A very few cases of this disease came under observation during the year.

Diagnosis of Diphtheria.—The arrangements which were made in 1897 with Professor Delépine, of the Public Health Laboratory, Manchester, for the bacteriological examination of specimens taken from the throats of persons suspected of having diphtheria, have proved very satisfactory.

Antitoxin.—The District Council have authorised the Medical Officer of Health to keep a supply of this, so that if a case of diphtheria should be notified the antitoxin may be used without delay A supply has accordingly been always ready.

Isolation Hospital Accommodation.—The Bucklow Joint Hospital Board, on which Alderley Edge is represented, have made arrangements for cases of infectious disease, other than small-pox, to be treated at the new Isolation Hospital of Baguley. The same Joint Hospital Board have also arranged for the isolation and treatment of cases of small-pox.

Water-supply.—The water for the District is supplied by the Stockport Waterworks Company. The supply was good in 1905, and sufficient in quantity, but a few complaints of discolouration were received. A certain number of houses away from the pipe line are supplied by pump wells.

Dairies are registered and inspected. They were found in good sanitary condition in 1905. The new regulations have been in force since January, 1899.

Slaughter-house.—The only slaughter-house in the District has been inspected, and found in good order.

Factory and Workshop Act.—There are in this District no factories, but 31 workshops. The defects noticed were as follows:—5 cases of want of cleanliness, 1 of want of ventilation, and 1 other of nuisance. Notices were accordingly served, and these were complied with. No prosecutions were required. The only underground bakehouse in the District is now not used.

Refuse Removal.—The emptying of Ashpits has on the whole been well done.

Midden-privies.—During the year a few of these have been converted into water-closets and dry ashpits. In other cases ashbins have been provided, and are in use.

Alderley Edge Urban District.

Sewage Treatment.—The filter beds appear to be acting satisfactorily. The improvements of the filter beds referred to in the last Annual Report as having been commenced, are now completed, and appear to be working nicely.

Disinfection.—Clothing and bedding of infectious patients can now be removed for disinfection in a special van belonging to the Bucklow Joint Hospital Board, and disinfected at the Steam Disinfector belonging to the Board.

New Cemetery.—Four acres of land have been bought for a Cemetery on the Chelford Road. It is a very suitable site for this purpose. The work of laying out the ground will be shortly commenced.

ALSAGER

Urban District.

Medical Officer of Health—Dr. H. Crutchley.
Population at Census on April 1st, 1901—2,597.
Estimated Population in middle of 1905—2,750.
Area in acres—2,241.
Birth-rate per 1,000 living—26.2.
Death-rate per 1,000 living—10.5.
Death-rate from seven principal zymotic diseases—0.
Deaths under one year to 1,000 births—97.

The population of the area which now forms the Alsager Urban District was 1,912 in 1891. At the Census in 1901 the population of this District was 2,597. The increase in the populations during the decennium 1891-1901 was therefore 685, that is 35.8 per cent. The estimate of the population made for the middle of the year 1905 is only 50 higher than the estimated population for 1904. In 1905, the number of births registered in the District was 72, and the number of deaths registered in the District (including 1 in the Workhouse) was 29. The birth-rate is 0.9 above the average in 1895-1904, and the death-rate is about equal to the average in the same 10 years.

Seven of the deaths (including the 1 in the Workhouse) were of infants under a year old, and 8 were of persons 65 years old and upwards.

Alsager Urban District.

There were no deaths due to any of the principal zymotic diseases, but there was 1 death due to puerperal fever. There was 1 death from enteritis, 1 from septic disease, and 1 from cancer. There were 4 deaths from tubercular disease, including phthisis, 7 from bronchitis and pneumonia, 3 from premature birth, and 2 from heart disease.

Cases of Infectious Disease notified.—There were 19 cases of infectious disease notified, viz.:—2 diphtheria, 15 scarlet fever, 1 enteric fever, and 1 puerperal fever.

During the first quarter of 1905, Alsager was comparatively free from infectious diseases. In the second quarter measles was very prevalent among the younger children, and the Infant Schools were recommended to be closed. In the last quarter, the Schools were again closed, owing to the prevalence of whooping-cough, mumps, and chicken-pox.

Isolation Hospital Accommodation.—There are no means at present of isolating infectious cases other than small-pox. However, during 1903, application was made to the Local Government Board to issue a Provisional Order forming the Borough of Congleton, the Urban Districts of Sandbach, Alsager, Buglawton, and Biddulph, and the Rural District of Congleton into a united District, for the purpose of the provision, maintenance, and management, for the use of the inhabitants of the united District, of hospital accommodation for infectious disease other than small-pox. The Local Government Board Inquiry with reference to this application, was held at Congleton Town Hall on January 22nd, 1904.

Water-supply.—The Medical Officer of Health states that serious complaints reached him in an "Urgency Report" on the 13th June, 1905, as to irregular, uncertain, and insufficient water for flushing purposes. The attention of the District Council was promptly directed to the subject. The Medical Officer of Health summarises the contents of this Report as follows:—

(1) The water being shut off from 9 p.m. till 5-30 a.m., and the pump working constantly day and night.

A daily record of the quantity of water in the reservoir was taken at 9 p.m. and at 5-30 a.m., from the 30th May to the 9th June, 1905. The results shewed the average yield and the result of 24 hours' continuous pumping, to be 22,977 gallons.

(2) The new well intended to be sunk only 45 feet, was, by boring, increased to a depth of 84 feet, and proved a failure in two respects:—

(a) The small yield of water;

(b) The examination of a sample of the water by Mr. Carter Bell shewed that it contained organic matter due to surface contamination, and was reported to be "unsuitable for domestic use."

Mr. Wyatt, as an expert Water Engineer, was called upon to advise the Council, on the 25th July, and later, submitted a Report, which was discussed at a Special Meeting of the Council. Mr. Wyatt, being present, said that he had "confined his attention to the present scheme, had not made a survey of the District, and could not say it was the best scheme." Mr. Wyatt was instructed to inspect the District, and advise as to the best practical scheme.

The further Report by Mr. Wyatt was considered by the Council on the 14th November, when a resolution was moved:—

> "That an application be made to the Local Government Board to borrow money to proceed with the experiment as recommended by Mr. Wyatt, and, if successful, to raise money to carry out the scheme, or, failing the sanction, to borrow sufficient money to carry out any scheme recommended by Mr. Wyatt, and approved by Local Government Board."
> This motion was lost, and an amendment—
>
> "That the Tender of Messrs. Timmins and Son to continue the present boring at the well down to the water-bearing strata be accepted," was carried—4 voting for it, 2 against—2 not voting.

A Public Meeting of the Ratepayers of Alsager to consider the water question, was held on the 20th November, 1905. At the meeting of the District Council on the 12th December, the Chairman of the Council reported that at the Ratepayers' Meeting the following Resolution was passed by a large majority:—

> "That the members of the Alsager District Council be instructed to proceed forthwith to obtain a permanent and satisfactory supply of water for the Parish of Alsager, and in doing so to act under the advice of a Water Engineer of recognised standing. No scheme

to be adopted without a Local Government Board Inquiry."

Such is the position of the Alsager Water Question in the early days of 1906. Alsager is anxiously waiting for a pronouncement by the Local Government Board, and for further action by its Council.

The difficulties have now to be faced and grappled with, any further evasion and delay will only increase the inconvenience and injury Alsager has already suffered.

Sewers and Sewerage Disposal.—The Sewerage of Alsager has very little fall, and those portions of the sewers which require flushing from the mains, were flushed as well and frequently as possible under existing circumstances. The Medical Officer of Health on inspection found a more general diffusion of sewer gas than previously.

The Talke Alsager Road sewer is in an unsatisfactory condition, as previously reported. The filtration area has been better attended to during the year. The settling tanks are frequently emptied, and their contents carted away.

Dairies and Milkshops.—These were carefully inspected twice during the year. All appear to be in good condition. Nothing was required beyond the usual periodical whitewashing.

Cowsheds.—These were also carefully inspected and limewashed as required. The drainage, ventilation, etc., are satisfactory.

Bovine Tuberculosis.—A case of this disease was found in a cowshed. The infected animal was isolated, and eventually slaughtered, the carcase being buried.

Factories and Workshops.—These were inspected twice during the year. There are 2 factories, 4 workshops or workplaces, and 2 home workers' premises. In the course of inspection 7 defects were noted, all of which have since been remedied.

ALTRINCHAM

Urban District.

Medical Officer of Health—Dr. A. Golland.
Population at Census on April 1st, 1901—16,831.
Estimated Population in middle of 1905—17,818.
Area in acres—662.
Birth-rate per 1,000 living—26.5.
Death-rate per 1,000 living—11.9.
Death-rate from seven principal Zymotic Diseases—1.0.
Deaths under one year to 1,000 births—116.

The population of this Urban District was 12,440 at the Census in 1891, and 16,831 at the Census in 1901. The increase in the population during the decennium 1891-1901 was thus 4,391, that is 35.3 per cent. The estimate of the population made for the middle of the year 1905 is therefore reasonably low.

In 1905 the number of births registered was 473, and the number of deaths registered was 216. From the latter must be excluded 11 deaths of persons not belonging to the District, and there should be included 8 deaths of persons belonging to Altrincham which took place elsewhere. Thus, the number of deaths was 213. The birth-rate is 2.9 below the average in Altrincham in 1895-1904, and the death-rate is 4.9 below the average in Altrincham in the same 10 years.

The number of deaths from the 7 principal zymotic diseases was 18, viz. :—1 measles, 2 diphtheria, 4 enteric fever, and 11 diarrhœa. There were also 2 deaths from epidemic influenza, and 3 from enteritis. There were 17 deaths from phthisis, 4 from other tubercular disease, 10 from cancer, 17 from bronchitis,18 from pneumonia, 3 from alcoholism or cirrhosis of the liver, 7 from premature birth, 2 from diseases and accidents of parturition, 6 from accidents and 4 from suicide.

Among those who died were 55 infants under a year old. This number is equal to 116 per 1000 births. In 1895-1904 the deaths of infants in Altrincham were equal to 166 per 1000 births.

Cases of Infectious Disease notified.—There were 69 cases of infectious disease notified, viz. :—19 diphtheria, 26 scarlet fever, 10 enteric fever, 3 puerperal fever, and 11 erysipelas. Of these, 1 case of diphtheria, 20 cases of scarlet fever, and three cases of enteric fever were removed to Lloyd's Fever Hospital.

The monthly incidence of infectious cases is shown in tabular form below :—

Altrincham Urban District.

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Scarlet Fever... ...	...	...	3	1	3	3	2	2	1	3	2	...
Diphtheria	3	2	3	2	3	2	...	1	...	3	...	...
Enteric Fever ...	...	1	1	1	1	...	...	1	3	1	1	...
Erysipelas	...	2	1	...	4	...	...	1	...	1	...	...
Puerperal Fever ...	1	...	...	...	...	1	...	...	...	...	...	...

Scarlet Fever.—The 26 cases notified were spread thinly over the whole of the year, except the first and last months.

Diphtheria.—As two of the 19 cases proved fatal, the mortality was equal to 1 in 9.5. This disease was mainly present during the first half of the year. In many of the cases notified the ailment must have been of the very mildest character, if the diagnosis were correct, as some were certified cured, and disinfection requested, after very few days.

Enteric Fever.—This disease was observed in the second and last quarters of the year. Some of the cases were clearly importations, the rest were sporadic, and had no common cause.

Measles.—This disease was not prevalent to any extent except for a short time during the middle of the year. The number of cases is not known, but only 1 proved fatal.

Chicken-pox, Mumps and Ringworm.—During the latter months of the year there have been many cases of chicken-pox and mumps. Ringworm also kept a considerable number of children away from school.

Diarrhœa.—The 11 deaths recorded in 1905, is about equal to the average annual number. Though there is still very great carelessness in the feeding of infants, the Medical Officer of Health is able to see some results of the constant efforts to enlighten and educate the poor, in the proper way to manage their children. It is, however, most lamentable that so few mothers can, or will, nourish their children themselves.

Tubercular Diseases.—The 17 deaths from phthisis recorded in 1905 are equal to a death-rate of 0.95 per 1,000 living. There were also 4 deaths from other forms of tubercular disease.

The entire death-rate from tubercular disease was equal to 1.18 per 1,000 living.

Isolation Hospital Accommodation.—During 1905 Lloyd's Fever Hospital has continued in use. It has already been reported that the County Council consider this Hospital inadequate, and the scheme for its replacement by a new Hospital is still under consideration. Various architects have been instructed to prepare plans for a suitable Hospital to contain 30 beds, and so arranged as to enable the Authority to deal simultaneously with two or three distinct diseases.

The plans sent in have received full consideration, and one for a suitable hospital has been selected. A convenient site has also been chosen. Site and plans having thus been settled, there is reasonable prospect that the new hospital will shortly be erected, and replace the old building which has served the Authority hitherto.

Small-pox Hospital Accommodation.—A valuable and economical arrangement has been made with the Manchester Corporation, by which they undertake to remove and treat any cases of small-pox that may occur in the Altrincham Urban District.

Bacteriological Diagnosis.—Arrangements have been made with Professor Delépine, of Victoria University, Manchester, for the examination of morbid products in suspected or doubtful cases of diphtheria and typhoid fever.

Diphtheria Antitoxin.—A store of this is now kept by the Medical Officer of Health, and will be given free of charge to Medical Practitioners in the District, requiring it for use among the poor.

Disinfection.—Careful disinfection of premises after infectious disease has been carried out, including houses in which deaths from phthisis have occurred.

Water supply.—This is derived from Manchester and distributed by the North Cheshire Water Company. It has been tested from time to time and found to be satisfactory.

Public Baths.—In the Annual Report for 1901 it was stated that Public Baths had been opened. The cost was partly met by a sum of money subscribed to do honour to the late Queen's Jubilee, and the Baths were handsomely and satisfactorily

completed by the District Council. These Baths have proved so successful, that it has been decided to increase their usefulness by building another Plunge Bath.

Common Lodging-houses.—These have been inspected from to time, 58 visits having been made. With two exceptions they were all found clean and in order. Lime-washing is done regularly in accordance with the requirements.

Slaughter-houses have been regularly visited by the Inspector, the premises were in good order, with two exceptions. In all 58 visits were made. Notices were served with reference to lime-washing, and duly complied with.

Improved Slaughter-houses and Lairages.—In the Annual Report for 1902 it was noted that a loan for providing new slaughter-houses and lairages had been sanctioned, and that the District Council had possession of a suitable site. During 1903 good progress was made. The new Abattoir was completed in 1904, and the District Council now have the regulation of the meat-supply of the District directly within their own control.

This Abattoir has proved a most useful undertaking, though something remains to be done to the older part, which should be brought up to date in 1906.

Dairies and Milkshops.—These (28 in number) were all inspected twice in 1905. They were found clean and in good order.

Factory and Workshop Act.—This Act had full attention in 1905. In all 211 visits were made to Factories and Workshops, which include Laundries. Fifty one defects were found, viz :—Forty premises requiring lime-washing, six premises without sanitary conveniences, and five premises insufficiently ventilated. Eighty one formal notices were served in respect of defects, and 77 of these notices were complied with before the close of the year.

The bakehouses were found generally satisfactory during the year. As stated in the last Annual Report, 3 of the underground bakehouses have been certified, and the remainder done away with.

Housing-scheme.—In the Report for 1904, it was stated that very suitable plans had been got out for 11 pairs of small dwelling-houses, and two larger dwelling-houses for the very poor at small rents. It is now reported that four pairs of the small dwelling-houses are roofed and nearing completion.

Altrincham Urban District.

The Inspector of Nuisances, Mr. D. C. Moody, who has been relieved of some of his former duties, is thus able to give the whole of his time to his work as inspector, and reports on matters coming under his supervision.

The Mortuary, which (with post-mortem room attached) was built at the back of the Town Hall in 1901, is a great improvement on the premises previously used as a mortuary.

Nuisance Abatement.—Many nuisances were abated during 1904, a large proportion of the work being done without the serving of formal notices. For the most part notices were served in respect of defective drains, insanitary privies and back-yards and passages needing paving. Notices were served in respect of 11 dirty houses, 8 overcrowded houses, 64 houses the drains of which were out of order, 36 houses in which the floors and yard paving needed repairing, and 22 accumulations of manure. 13 notices were served in respect of chimney firing.

Refuse Removal.—The removal of night-soil and other refuse from ashpits is carried out under the supervision of the District Council's Foreman. This work was not efficiently done during the latter part of 1905.

Sewage Disposal Works.—During 1901 the new works in connection with the extension of the Sewage Farm were begun, and since then much progress has been made. At a portion of the new works, sewage is being regularly received and dealt with.

Canal Boats.—During the year 84 visits were made to 66 boats. All these boats except 5 were in good order. On 5 boats defects were noticed, and accordingly notices were served upon the owners, after which the defects were remedied. The cabins of the boats were registered to accommodate 284 persons, and were occupied by 153 persons, viz. :—110 men, 31 women, and 12 children under 12 years of age. No cases of sickness were found on board.

ASHTON-UPON-MERSEY

Urban District.

Medical Officer of Health—Dr. C. J. Renshaw.
Population at Census on April 1st, 1901—5,563.
Estimated Population in middle of 1905—5,900.
Area in acres—1,622.
Birth-rate per 1,000 living—24.0.
Death-rate per 1,000 living—10.0.
Death-rate from seven principal Zymotic Diseases—0.5.
Deaths under one year to 1,000 births—105.

The Urban District of Ashton-on-Mersey was constituted early in 1895. This is therefore the Eleventh Annual Report of the Medical Officer of Health. The population of the area forming the Urban District was 4,234 in 1891. At the Census in 1901, the population of the District was 5,563. The increase in the population during the decennium 1891-1901 was thus 1,329, that is 31.38 per cent. The Medical Officer of Health estimates that the population has increased by 337 between the taking of the Census in 1901 and the middle of the year 1905.

During 1905 the number of births registered was 142, and the number of deaths registered in the District (including 7 deaths of residents registered in Public Institutions beyond the District) was 59. The birth-rate is equal to the mean local birth-rate in 1895-1904. The death-rate is 3.4 lower than the mean local death-rate in 1895-1904, and is lower than any previously recorded in the District. Only 12 deaths were of infants who had not completed their first year; and 9 were of persons above 65 years of age.

One death was due to diphtheria, 1 to enteric fever, 1 to diarrhœa, 1 to phthisis and 1 to other tubercular disease. Two deaths were due to cancer, 9 to bronchitis, 5 to pneumonia, 2 to diseases and accidents of parturition, and 5 to heart diseases.

Cases of Infectious Disease notified.—There were 54 cases of infectious disease notified, viz.:—6 diphtheria, 3 erysipelas, 9 scarlet fever, 2 enteric fever, 1 puerperal fever, 14 measles and 19 whooping-cough. Three of the cases of scarlet fever were removed to the Isolation Hospital at Baguley.

Disinfection is carefully carried out when required. In fatal cases of tuberculosis, the premises are disinfected. As this disease is not notifiable, knowledge of cases is rarely obtained by the officials of the Authority, except in the event of death. Otherwise disinfection of rooms during life would be of use to phthisical patients and their friends.

Ashton-upon-Mersey Urban District.

Isolation Hospital Provision.—As Ashton-upon-Mersey is one of the Districts forming the Bucklow Joint Hospital District, infectious cases (including small-pox) can be efficiently isolated and treated.

Bacteriological Examinations.—Arrangements were made in 1899 for having material from suspected cases of diphtheria, enteric fever and phthisis examined at Owen's College Laboratory.

Antitoxin has, for the past five years, been kept for use in cases of diphtheria. Proof of its efficiency in lessening the number of fatal cases is rapidly accumulating.

Water-supply.—The water supplied by the North Cheshire Water Company continues of good quality.

Sewer Ventilation.—Three shafts have been connected to the sewers in suitable positions. This proves a much better way of ventilating that by man-holes, at the street level.

Nuisance from Waste Paper.—The cages in the streets for the reception of waste paper have done much to abate this nuisance.

Ashpit Contents.—More care than usual appears to have been exercised in keeping vegetable matter out of the ashpits. Such refuse in ashpits encourages flies.

More attention should be given to the destruction of flies in summer.

Ashbins are replacing ashpits in many houses, and particularly in small property. Their use is encouraged by the Authority. They are emptied in the majority of cases once a fortnight.

Old Cottage Property.—This is receiving attention, and negotiations are proceeding for the closing of certain cottages, and for of altering others. Certainly, some are at present unfit for habitation.

Dairies and Cowsheds have been kept under supervision throughout the year, and are in good condition.

New Houses.—During the year 35 plans have been approved by the Council. They refer to 85 houses, a chapel, and

2 building estates. There were 39 houses completed in 1905, and certified for occupation.

Empty Houses.—Of the 1,478 houses in the District 102 are empty.

Sanitary Improvements Effected.—10 houses have been redrained, at 6 houses the drains have been put in order, and at 7 houses the privies have been converted into water-closets.

Factory and Workshop Act.—The provisions of this Act have been carried out. Two factories and 28 workshops have been inspected. All were in good condition, except in 3 instances. Notices were served to remedy the defects observed.

Slaughter-houses have been inspected and found in good order.

Refuse Removal.—The work of refuse removal in 1905 may be compared with the same work in 1900. In 1905 there were 3,508 emptyings of ashpits, and 2,516 emptyings of ashbins. In 1900 there were 2,550 emptyings of ashpits, and 74 emptyings of ashbins.

Sewage Disposal.—The willow beds where the sewage is disposed of continues to act efficiently. However, the land now appears to be taking all the sewage it will take, and shortly there will have to be a considerable extension of area, or a new system will have to be adopted.

HIGHER BEBINGTON

Urban District.

Medical Officer of Health—Dr. G. A. Kenyon.
Population at Census on April 1st, 1901—1,540.
Estimated Population in middle of 1905—1,588.
Area is acres—699.
Birth-rate per 1,000 living—33.4.
Death-rate per 1,000 living—18.9.
Death-rate from seven principal Zymotic Diseases—1.2.
Deaths under one year to 1,000 births—56.

The population of this Urban District was 1,421 at the Census in 1891, and 1,540 at the Census in 1901. During the decennium 1891-1901 the population increased by 119—that

is, 8.3 per cent. The estimate of the population made for the middle of the year 1905 is, therefore, not excessive.

In 1905, the number of births registered in this District was 53, and the number of deaths registered in this District was 26. To the deaths must be added 2, which occurred at the Workhouse, and 2 at Birkenhead Hospitals. The birth-rate is 5.8 above the average in the ten years 1895-1904, and the death-rate is 6.0 above the average in the same ten years.

Three of those who died were under a year old, and 10 of those who died were upwards of 65 years old.

One death was from measles, 1 from diarrhœa, 1 from enteritis, and 1 from an accident. There were 7 deaths from tubercular disease, 6 of which were from phthisis, 3 deaths from bronchitis, 3 from pneumonia, and 2 from heart diseases.

Infectious Diseases notified.—There were only 5 cases of infectious diseases notified, viz.:—2 of scarlet fever, 1 of enteric fever, and 2 of erysipelas. The case of enteric fever was isolated in Hospital. The cases of scarlet fever, which were in the same house, were effectively isolated at home. Disinfection was duly attended to.

Phthisis.—The 6 deaths from phthisis are equal to a death-rate of 3.77 per 1,000 living—a remarkably high rate.

Inspection.—The Medical Officer of Health has visited the District on several occasions during the year, to make inspections, and has advised thereon.

Pig-keeping.—Many inspections have been made with reference to pig-keeping, which is becoming much more common in this and some other suburban districts. It is causing some discomfort and annoyance, and the apprehension of more. The powers available for control will be enough to keep in order the ordinary householder who keeps a few pigs. When, however, many pigs are kept by a man who makes a business of it, with ordinary powers it may be difficult to prevent a nuisance. It is suggested that a remedy might be found in a modification of the bye-law, increasing the prohibited distance where a large number of pigs are kept, as the greater the number of pigs the greater the nuisance.

Water-supply.—The District is supplied throughout with water by the West Cheshire Waterworks (deep wells).

Though otherwise of good quality, this water has of late become exceedingly hard, and caused great inconvenience by furring up boiler pipes, and being ill-suited for washing. The cost of softening it has been considered, but the expense cannot be incurred at present. The water has been several times very turbid with rust, but there is always one explanation when complaint is made.

Sewerage and Sewage Disposal.—The District is, on the whole, well sewered, and the sewers are flushed as required. There are, however, some outlying houses which require to be connected—a difficult matter, owing to their distance from the sewers. Thus, the removal of excreta, except in the case of a few remote houses, is by water-carriage.

Refuse Removal.—Ashes and house refuse are removed by a contractor employed by the District Council; 305 ash-pit emptyings were effected in 1905. 60 houses have dust-bins, and these are emptied weekly.

Inspector's Report.—Mr. Lloyd, the Inspector of Nuisances, has made a careful and satisfactory Report. He states that, during the year, 18 complaints of nuisances were received and dealt with, 6 orders were issued to remedy sanitary defects, 41 houses, premises, etc., were specially inspected, and 66 re-inspected. The drains of 10 houses were tested, and the drains of 6 houses were repaired. Two privies were converted into water-closets, 3 accumulations of refuse were removed. Two cases of over-crowding were dealt with.

New Houses.—Eight new houses were built in 1905, Building Bye-laws are in force.

Dairies.—The 1 milkshop and 6 cowsheds in the District were duly inspected to see that they were kept in order, and lime-washed twice a year. Regulations, made under the Dairies, Cowsheds, and Milkshops Orders, came in force on June 11th, 1899.

Factory and Workshop Act.—The only premises coming within the provisions of this Act are a joiner's shop, and a bakehouse. The joiner's shop has been inspected. The bakehouse was reconstructed, above ground, in 1903. The air-space, ventilation, and sanitary conditions, are quite satisfactory.

Higher Bebington Urban District.

Slaughter-houses.—There are 2 in the District, which have been inspected, and found in order.

Isolation Hospital Accommodation.—The District is contributory to the Wirral Joint Hospital Board, having thus good accommodation for infectious cases.

LOWER BEBINGTON

Urban District.

Medical Officer of Health—Dr. G. A. Kenyon.
Population at Census on April 1st, 1901—8,398.
Estimated Population in middle of 1905—9,670.
Area in acres—1,051.
Birth-rate per 1,000 living—35.0.
Death-rate per 1,000 living—12.3.
Death-rate from seven principal Zymotic Diseases—1.1.
Deaths under one year to 1,000 births—92.

The population of this Urban District was 5,261 at the Census in 1891, and 8,398 at the Census in 1901. Thus during the decennium 1891-1901 the population increased by 3,182, that is 61 per cent. The estimate of the population made for the middle of the year 1905, is arrived at by adding to the Census population four-tenths of the increase during the decennium 1891-1901.

During 1905, the number of births registered in the District was 339, and the number of deaths registered in the District was 119, excluding 1 which took place in the Port Sanitary Hospital, and including 16 which occurred in Public Institutions outside the District, viz., 1 in the Fever Hospital, 10 in the Workhouse, 2 in the County Asylum, and 3 in Hospitals in Birkenhead or Liverpool. The birth-rate is about 1.5 above the average in 1895-1904, and the death-rate is about 0.4 below the average in the same 10 years.

There were 33 deaths of infants under a year old, that is equal to 97 per 1,000 births. In 1895-1904, the deaths of infants were equal to 109 per 1,000 births.

The deaths include 11 from the principal zymotic diseases, viz.:—4 measles, 1 scarlet fever, 2 whooping-cough, 2 diphtheria, and 2 diarrhœa. There was 1 death from

epidemic influenza, and 1 from puerperal fever. There were 6 deaths from phthisis, 3 from other tubercular diseases, 5 from cancer, 14 from bronchitis, pneumonia, and pleurisy, 4 from alcoholism or cirrhosis of the liver, 3 from premature birth, 2 from diseases and accidents of parturition, 11 from heart diseases, and 3 from accidents.

Cases of Infectious Disease notified.—There were 64 cases of infectious disease notified, viz., 10 diphtheria, 37 scarlet fever, 6 enteric fever, 3 puerperal fever, and 8 erysipelas. Of these, 52 cases were isolated in Hospital, viz.:— 9 diphtheria, 32 scarlet fever, 6 enteric fever, 2 puerperal fever, and 3 erysipelas. Thus 81 per cent. of the known cases were isolated in Hospital.

Prompt removal to Hospital, or isolation at home, with careful attention to disinfection, has prevented any general spread of disease.

None of the cases appeared to be due to infected milk or contaminated water, and there was little evidence of spread of infection.

Action taken to prevent spread of Infection.—All houses where infectious cases occurred were visited, disinfectants supplied as required, and measures taken to prevent the attendance at school of pupils from these houses. Insanitary conditions when discovered were removed, and cases which could not be isolated at home were promptly sent to Hospital. As soon as the patients were removed, or had recovered, disinfection of premises, etc., was carried out.

Inspection.—The Medical Officer of Health has visited the District from time to time, and advised the District Council and the Inspector on various points of detail.

Water-supply.—The District is supplied with good water from the West Cheshire Waterworks (deep wells).

Though this water is very pure as regards freedom from animal or vegetable matter, it has of late become unduly hard. Efforts are being made to arrange for having the water softened, which will be a great advantage. The Water Company are willing to soften the water, if empowered to recover the extra expense by an addition to the water-rate.

Dairies and Cowsheds.—There are 10 cowsheds and 15 dairies in the District, which have been frequently inspec-

ted. In all, 17 notices have been served upon the occupiers, on account of overcrowding, accumulations of manure, neglect to whitewash, and defective paving.

Factory and Workshops Act.—There are 20 workshops on the register, which are visited monthly, and there is also a home worker's room. Thirteen written notices were served in respect of defects discovered. These defects have since been made good.

Slaughter-houses.—There are 3 licensed slaughter-houses in the District. These have been inspected regularly, and occasionally the occupiers have needed admonition. The licenses are granted annually.

Two notices were served for defective floors, and 5 for limewashing.

Common Lodging-houses.—There are 4 common lodging-houses on the register. All have been systematically inspected. On two occasions only, fault had to be found with the condition of the floors and clothing.

Drain Testing.—The apparatus of testing drains by smoke was during the year used for testing the drains of 61 new houses, and 12 old houses.

Main-drainage.—In the report for 1901, it was stated that the main-drainage scheme had been completed, and was in operation.

Sewer-flushing.—This has been duly attended to, and sewers are flushed every fortnight.

Refuse Removal.—Ashpit refuse is removed at regular intervals, premises being taken in rotation, by the District Council's servants. The movable bins in use in the new houses at Port Sunlight are emptied weekly.

Inspector's Report.—Mr. Westmorland, the Inspector of Nuisances, has made a very careful and satisfactory Report. He states that house-to-house inspection has been made as far as possible. All houses, in respect of which complaints have been received, have also been inspected, and houses in which infectious disease has occurred. In all, 725 re-inspections of houses have been made, and 223 Notices for the abatement of nuisances have been served. In several instances, owners,

agents, or contractors, have been met by appointment on the spot. The nuisances discovered or complained of include 92 caused by obstructed or defective drains, 6 defective cisterns, and 3 overcrowded houses.

During the early part of the year, much of the Inspector's time was occupied in further tracing the course of drains and streams, discharging into the Bromborough Pool tidal reaches.

Infected Library-books Destroyed.—Books belonging to Public Libraries on infected premises are reported and destroyed.

Hospital Accommodation.—The District is contributry to the Wirral Joint Hospital Board, having thus excellent accommodation for infectious diseases.

BOLLINGTON

Urban District.

Medical Officer of Health—Dr. D. W. Main.
Population at Census on April 1st, 1901—5,245.
Estimated Population in middle of 1905—**5,245.**
Area in acres—1291.
Birth-rate per 1,000 living—17.9.
Death-rate per 1,000 living—11.8.
Death-rate from seven principal Zymotic Diseases—0.2.
Deaths under one year to 1,000 births—127.

The population of the area which now forms Bollington Urban District was 5,335 at the Census in 1891. At the Census in 1901 the population of this District was 5,245. The decrease in the population during the decennium 1891-1901 was, therefore, 90—that is 1.68 per cent.

It is estimated that the population at the middle of the year 1905 was equal to the population enumerated at the Census in 1901.

Bollington is situated at an altitude of from 440 feet to 700 feet above sea-level.

The Village proper lies in a valley running east and west between the Nancy and Nab Hills. The character of the soil and

sub-soil is various and difficult to describe. Generally it is sandy, alternating with gravel and clay, and in places is very boggy. To the west it is sandstone.

In 1905 the births registered in the District numbered 94, and the deaths registered in the District (including 4 deaths of residents registered in Public Institutions outside the District) numbered 52. The birth-rate is 4.8 below the average in Bollington in 1895-1904, and the death-rate is 3.9 below the average in Bollington in the same 10 years.

Infant Mortality.—Twelve of those who died were infants under a year old, a number equal to 127 per 1,000 births. This compares favorably with the infant death-rate in 1904, which was equal to 182 per 1,000 births, and with the average of 1895-1904, which was equal to 131 per 1,000 births.

The main causes of a high rate of infant mortality are :—

1. The employment in factories of those about to become mothers, and those who have been recently confined and should be nourishing their infants.
2. The infants of factory employed mothers being badly cared for and ill-fed during the hours their mothers are at work.
3. The environment of the infant being insanitary, frequently caused by the storage of refuse and filth close to the house, and the soil about the house becoming polluted through badly paved yards.
4. No proper provision being made for isolation and disinfection.
5. Ignorance of mothers as to feeding and clothing children.

The high infant-mortality which obtained in 1904 was the occasion of the Health Committee appointing a small Sub Committee from amongst its members to investigate the matter and report thereon. This Sub-Committee has, since its appointment, endeavoured to obtain full information upon the subject. With regard to the first of the causes above referred to, the Health Committee wisely decided to ask the Managers of the various Mills in the District to meet them and talk the matter over with them. The risk to both mother and child of women working whilst in an unfit state, before, or too soon after confinement, was pointed out and fully understood. At the same time it was realised that it might press heavily on some poor families where the mother was, to a large extent, a breadwinner of the family, if she were prevented entirely from working for a long continued time.

It was finally decided that, on pregnancy becoming recognized, the woman should be prevented from working longer unless she brought a note from a medical man stating that she might safely be allowed to work for a definite time longer, and at the same time it was agreed that women should not be allowed to re-commence work too soon after confinement.

On the second point the Sub-Committee suggested that it be an instruction to the Medical Officer of Health, that where he finds that a child has died in any house with insanitary surroundings, a special report be made by him to the Health Committee, and that further action be taken as deemed necessary by the Committee.

With regard to the two points affecting the management, feeding, etc., of infants, the Sub-Committee approached the Ladies' Committee of the District Nursing Association, with a view to seeing if they could arrange for visitors among themselves to call on mothers of new-born children, to do what they could, in the way of advice and example to help them. The Nursing Committee, whilst realising that indiscriminate visiting might, in some cases, lead to objection, willingly agree to visit such mothers as might be pointed out to them by Medical men or Nurses.

The Ladies' Committee also arranged for two lectures to be given to mothers, and it is gratifying to note that these were well attended.

Pamphlets on the care of children were also distributed by the ladies, and one of their Committee has, for some time past, been providing boat-shaped feeding bottles for poor mothers, who could not afford this more expensive bottle.

Cases of Infectious Disease notified.—There were 7 cases of infectious disease notified in 1905, viz. :—4 scarlet fever, and 3 erysipelas. These cases were isolated at home as far as practicable.

Scarlet Fever.—The four cases were notified respectively in Lord Street, Chancery Lane, Lowerhouses and Wellington Road. Insanitary conditions were found in or near these houses where the patients lived, and the defects were remedied.

Isolation Accommodation for Small-pox.—Two beds have been reserved in the Macclesfield Borough Hospital for the treatment of small-pox. The retaining fee is £30 per annum; the charge for one case being £5 5s., and for two at the same time £9 9s. per week.

Needed Isolation Hospital Accommodation.—The District is still in need of Hospital accommodation for the isolation of infectious cases other than small-pox. It will be remembered that the offer from a private donor of £2,000 for the purpose of erecting an Isolation Hospital in the District was allowed to be withdrawn. It is almost impossible to isolate infectious cases in the houses of the people, and the fact that the number of infectious cases has been small during the last few years, whilst creditable to the District, indicates that there are a greater number liable to infection, should any disease obtain hold in the neighbourhood. On this account it is not only advisable but necessary to have some means of isolating the early cases of infectious disease, and to this end some steps will have to be taken sooner or later.

Unfortunately the borrowing powers of the Urban District are at an end, so that there does not appear to be any immediate prospect of obtaining a hospital. In the opinion of the Medical Officer of Health, the Isolation Hospital at Macclesfield is too far away to be of the least service for Bollington patients, even if the Macclesfield Corporation were willing to arrange for the use of some beds there.

Disinfection, after cases of infectious disease, is carried out by fumigation with sulphur.

The Medical Officer of Health recommends that chlorinated lime be used generally for the disinfection of premises, or else that formaldehyde lamps be used.

Adoptive Acts. — During 1899 the District Council adopted (1) part 3 of the Public Health Acts Amendment Act, 1890, (2) the Infectious Disease (Prevention) Act, 1890, with the exception of clauses 6, 8, 9, 10 and 12, and (3) the Private Street Works Act, 1892. These came in force on September 1st, 1899.

Water-supply.—This continues to be in every way satisfactory. The supply derived from the boreholes in Rainow is wholesome and free from impurities. Owing to the large increase of water required for many additional waterclosets recently provided, it becomes exceedingly important to prevent waste. In the event of a very dry summer, there may be a shortage.

New Building Bye-laws have been submitted to the Local Government Board for approval, and returned to the District Council. They were passed on December 19th, 1903, and have since been printed.

House Accommodation.—The number of inhabited houses is 1175. Two houses and a shop were completed during 1905, and a house and shop combined are in course of erection. Nearly all the houses in the District are substantially built of stone. However, the greater number have insufficient sleeping accommodation. Houses with two bedrooms only are unsuited for a family with several children of both sexes. In all houses erected during the last few years improved accommodation has been provided.

The air-space about the houses is as a rule fairly sufficient, though in some instances, as regards old property, air-space is deficient.

Sewerage and Drainage.—The New Main Drainage Scheme was completed in July last, and a caretaker has since been appointed to look after the settling tanks and filter beds at the outfall works.

The Council have, with as much speed as possible, pushed on the connecting up of drains from private property to the main drain. In cases where the Council had to do the work, it was done promptly. In cases where the owner was responsible, he has been urged to get the work done as quickly as possible.

The completion of the Sewerage Scheme has caused a large amount of work in alterations to house drainage. At 78 houses the drains were in such a condition as to be a nuisance, and in these cases new drains were laid in accordance with the Bye-laws and connected to the new sewers by the owners. Where it has been necessary to provide a new sewer on account of the quantity of surface water passing through the old sewer, the connection of the house drains (when satisfactory) has devolved on the Council, the number of houses so connected being 197.

There are still 215 houses on the line of new sewers the drains from which are not connected thereto, the drainage running direct into the brook, but the work of connecting is being proceeded with.

Sewer Ventilation —The ventilation of the sewers has been a source of complaint. Indeed the ventilation of sewers by means of open grating manhole covers at the street surface is a frequent cause of complaint in Bollington and elsewhere. It would appear advisable to substitute for these ventilators upcast shafts, in such situations as to ensure that the foul gases from the sewers will be discharged where they are least likely to do harm. There are at present 15 ventilating shafts connected to the sewers.

Storm-overflow.—Owing to an oversight in the plan of the sewers, no storm-overflow was provided at the junction of the new sewer through Palmerston Street with the old sewers from Ingersley Road, Shrigley Road, Church Street, and part of Palmerston Street. The result was that, as these old sewers also receive surface water, the new sewer was not large enough to take the water in the event of a heavy thunderstorm, and the cellars in the neighbourhood were flooded. With the provision of a storm-overflow there is now no possibility of the cellars being flooded.

Rivers Pollution—The Main Sewerage Scheme having been completed in the summer, a special Sub-Committee was formed to inspect the river, and examine into the cause of its pollution. The investigations of this Committee were not completed at the close of the year. As soon as their report is presented, no doubt, efficient steps will be taken for the prevention of the pollution complained of.

House-to-house Inspection has been carried out by the Inspector more thoroughly in 1905 than in previous years. The Medical Officer of Health hopes shortly to go round the whole District with the Inspector.

Abatement of Nuisances.—Where nuisances have been found to exist the offenders have been duly notified and abatement obtained in all cases to the satisfaction of the Council.

Smoke Nuisance.—The attention of the District Council having been called to this matter, the Inspector was asked to take observations as to the dense black smoke emitted from mill-chimneys. However, there is no sign of this grave nuisance being abated. In particular, one of the factory chimneys is too low, and many complaints have been made of the dense black smoke from this chimney.

Report of Sanitary Inspector.—Nuisances arising from defective combined privy and ashpits belonging to 17 houses have been dealt with. In 13 cases water-closets and dry covered ashpits or bins were substituted. In the other 4 cases the ashpits were concreted inside, to prevent soakage.

There are now 144 houses in the district provided with water-closets, being an increase of 23 in the year. Of these 2 are in new houses erected during the year, 13 are, as mentioned previously, the result of complaint against defective conditions existing, and 8 have been put in on the owner's initiative.

Bollington Urban District.

Drains have been laid at two mills and connected to the new sewers to carry away the liquid sewage which, in one case, had previously to be carted away with the solid matter, and this removal was a most offensive nuisance. Ventilators have also been fixed at the top of three stacks of closets at one mill.

These are only slight attempts to modify the nuisance arising from the present insanitary arrangements, and there is no reason now there are means of dealing with the sewage why water-closets should not be provided at all the mills, seeing also that at each mill they have a supply of water available.

Refuse Removal.—The collection and removal of house-refuse is undertaken by the District Council's men at intervals of a month. Nightsoil is now also removed regularly under the superintendence of the Inspector of Nuisances. This is a much more satisfactory way of dealing with the stuff than leaving it to be collected by the farmers.

At the monthly collection 160 loads of house-refuse have been removed. This work would be much facilitated by the provision of suitable bins for the storage of refuse between the periods of collection. During the year there were 1,429 tons of nightsoil removed at a cost for carting of a little over £89, and for labour in emptying at a cost of £52.

Factory and Workshop Act.—This has had attention. Generally speaking, the premises have been found in order. Bakehouses are the chief places coming under this Act. All these have been kept clean, and whitewashed during the year. It is pointed out that with the general introduction of gas stoves, much baking of bread for sale is being done at ordinary cottages by means of such stoves. Where this is done there is a bakehouse according to the Act, and it comes within the regulations, the chief of which is the requirement of lime-washing twice a year. Copies of the bye laws affecting bakehouses have been distributed amongst the cottagers referred to, so that they will henceforth be in no doubt as to their obligations.

Cowsheds have been frequently inspected. There are 6 within the District. The condition of these premises has improved greatly since they have been placed under the regulations.

Slaughter-houses.—There are 3 in the District, and all have been duly inspected. They are clean and in order. One of them, which used to drain into the brook, has been provided with a drain, connected to the sewer.

Diseased Meat.—Two carcases of beef affected with tuberculosis have been destroyed. The weight of the 2 carcases was 1,080lbs., and the value given was £27 10s. 0d. The owners in both cases reported the condition of the meat to the Inspector as soon as they found out that something was wrong with it.

Offensive Trade.—As mentioned in last year's report, tripe is boiled by one butcher in the village—though not to the extent it was a year ago. A special Sub-Committee visited the premises and reported on them. As a result of this report the Council agreed to grant a licence to boil tripe, subject to certain necessary sanitary alterations being carried out. All the alterations required were carried out before the close of 1905.

BOWDON

Urban District.

Medical Officer of Health—Dr. M. Duggan.
Population at Census on April 1st, 1901— 2,788.
Estimated Population in middle of 1905—2,800.
Area in acres—850.
Birth-rate per 1,000 living—9.6.
Death-rate per 1,000 living—6.8.
Death-rate from seven principal Zymotic Diseases—0.
Deaths under one year to 1,000 births—37.

The population of this District was 2,792 at the Census in 1891, and 2,788 at the Census in 1901. The decrease in the population during the decennium 1891-1901 was thus 4.

It is estimated that the population has slightly increased since the Census.

The number of births registered in the District in 1905 was 27, and the number of deaths registered in the District in 1905 (including the death of a resident elsewhere) was 19. The birth-rate is about 3.8 below the Bowdon average, and the death-rate is about 4.4 below the Bowdon average.

One of those who died was an immature infant, and 6 were persons over 65 years of age.

There was no death from any of the principal zymotic diseases. There was one death from influenza, one from phthisis, one from enteritis and one from cancer. There were 2 deaths from pneumonia and 5 from heart disease.

Bowdon Urban District.

Cases of Infectious Disease notified.—Only 3 cases of infectious disease were notified, viz.: 1 diphtheria, 1 scarlet fever and 1 erysipelas. These could be isolated at home. Not one of them required to be removed to Hospital.

The above excellent record the Medical Officer of Health attributes to the gradually improved sanitary condition of the District, especially in Bowdon Vale.

Isolation Hospital Accommodation.—As was mentioned in the Annual Report for 1903, the District Council have made arrangements for infectious cases from Bowdon to be taken into the Sanatorium at Baguley.

Arrangements are being made with the Manchester Corporation for the treatment of any small-pox cases which may occur in Bowdon.

Water-supply.—This appears to be sufficient, and in quality quite satisfactory.

Inspection.—The Medical Officer of Health has inspected the sanitary arrangements of the District from time to time during 1905, and found the property in the Vale (of which he has complained in past years) has been put in better repair. However, the yards of Vale cottages still require to be put in order, and some of the premises in Priory Street require repair.

Dairies and Cowsheds have been inspected. They are, as a rule, clean and well kept, and properly ventilated. The cowshed in Vicarage Lane (several times reported for its uncleanliness) has been closed.

Refuse Removal.—Ashpits, etc., are regularly emptied by contract. The contractors perform their work satisfactorily.

The Sewage Farm appears to be kept in fair working order.

BREDBURY AND ROMILEY

Urban District.

Medical Officer of Health—Dr. F. Cant.
Population at Census on April 1st, 1901—7185.
Estimated Population in middle of 1905—7968.
Area in acres—3986.
Birth-rate per 1000 living—20.0.
Death-rate per 1000 living—12.3.
Death-rate from seven principal Zymotic Diseases—0.1.
Deaths under one year to 1000 births—137.

By Local Government Board Order, No. P. 1,711, which was confirmed by Local Government Board Provisional Orders Confirmation (No. 11) Act, 1901, and came into operation on November 9th, 1901, part of the Civil Parish of Bredbury, in the Urban District of Bredbury and Romiley, was added to the Civil Parish and County Borough of Stockport. The area of the Urban District of Bredbury and Romiley and of the Administrative County of Chester was thus reduced by 192 acres, inhabited by 20 persons.

By another Local Government Board Order which came in force on September 29th, 1902, a large portion of North Brinnington was added to Bredbury and Romiley District. This addition consists of 451 acres, and has an estimated population of 120. It is situated on the north-west border of Bredbury, and extends down to the River Tame, which bounds it on the west and north. It consists almost entirely of farm land, the houses (20 in number) being much scattered. The ground is generally level, but slopes down to the river at the edge. As the added portion of Brinnington adjoins Bredbury, and has been added to the same registration area, it will, for the purposes of this Report, be taken as part of Bredbury. The area and estimated population of Bredbury and Romiley are, therefore, as follows:—

Bredbury	...	2,797 acres	...	estimated population	5372
Romiley	...	1,189 ,,	...	,, ,,	2596
		3,986			7968

There are separate registration areas for Bredbury, (including Woodley and Brinnington), and Romiley.

The estimate of the population made for the middle of the year 1904, is based upon the number of occupied houses at that time, and assumes that the number of persons per house will be the same as at the Census in 1901.

Bredbury and Romiley Urban District.

In Bredbury, there were registered 103 births, and 73 deaths, and there were 23 cases of infectious disease notified, of which 1 proved fatal.

In Romiley, there were registered 57 births, and 25 deaths, and there were 4 cases of infectious disease notified, of which none proved fatal.

The number of births in the whole District was thus 160, and the number of deaths in the whole District (including 2 deaths in Stockport Workhouse, 2 in Stockport Infirmary 1 in Salford Royal Dispensary, and 2 in Manchester), was 98. The birth-rate for 1905, was about 5 below the average in 1895-1904, and the death-rate for 1905 was about 2.8 below the average in the same ten years.

Twenty-two of those who died were infants under a year old, and 32 were persons 65 years of age and upwards.

Infectious Disease.—The cases notified at Bredbury were as follows:—1 diphtheria, 6 scarlet fever, 6 enteric fever, and 10 erysipelas. The cases notified at Romiley were as follows:—2 scarlet fever and 2 erysipelas. One case of scarlet fever was removed to Hospital from Bredbury and one from Romiley. One case of enteric fever was removed to hospital from Bredbury. The Hyde Hospital was made use of.

Reviewing the year 1905, it is seen that the District has not been visited by any epidemic of infectious disease. The patients notified had been, so to speak, odd cases here and there. All were enquired into as reported. All practicable steps were taken to prevent the disease spreading. In particular, great care was taken to prevent children in infected houses going to school or to meetings. Infected houses were carefully disinfected, and any sanitary defects noted were corrected. This, the Medical Officer believes, is the only way to prevent widespread epidemics arising from single cases of disease. Much depends upon the promptness of the notification given, and this both parents and Medical attendants should realise.

The Medical Officer regrets the occurrence of six cases of typhoid fever, and 12 cases of erysipelas; and cannot help feeling that the open ashpit privies, so common in the older parts of the District, are somewhat to blame. Ashpit privies are breeding beds for many sort of bacteria, and the emanations from them, especially when there is an excessive moisture in their contents, are quite sufficient to cause a low

state of health in people exposed to them, and consequently an increased tendency to become infected by any disease germs they come in contact with. This subject has been reported on year after year, attention being drawn to the number of ashpits, etc., which have been done away with, or otherwise improved. During 1905, the Sanitary Inspector had instructions to inspect all ashpit privies in the District, and report on their condition. Many improvements have been made in consequence of these Reports. Three ashpit privies have been done away with, and replaced by water-closets.

New requirement as regards Sanitary Accommodation.—The District Council now insists that all new houses built must be provided with water-closets.

Isolation Hospital Accommodation.—A new Agreement has been made with the Hyde Corporation, under which 4 beds are retained in the Isolation Hospital, with additional beds if required. The Medical Officer of Health believes that by this arrangement the District will be amply provided with accommodation for infected persons, who cannot be isolated at home.

Action taken to prevent spread of Infection.—As soon as the Medical Officer of Health was made aware of any case of infectious disease, he visited the house, made inquiries as to the probable source of infection, and took steps to prevent the spread of disease. The disinfection of clothing and of the premises was attended to during, and after, sickness, and all children in the house were prevented from attending schools and meetings. Helpful information has often been given by school teachers and by attendance officers. The premises and surroundings were inspected, and any defects noticed were remedied.

Disinfecting Rooms has been done by means of the formaldehyde lamp. This method has been in use since 1901, and the Medical Officer of Health thinks highly of it. He believes it to be more efficient and less offensive than disinfection by sulphur, which used to be relied on. In this way also the rooms (and clothing) of patients suffering from phthisis have been disinfected.

Bacteriological Diagnosis.—Arrangements have been made with Professor Delépine, of the Victoria University, Manchester, for the examination of morbid products in suspected or doubtful cases of diphtheria, or typhoid fever.

medical attendant forwards the sample, the Council pay the fee, and the result is made known to the Medical Officer of Health. Regret is expressed that more use is not made of this help to diagnosis.

Water-supply.—There is a good supply of wholesome water to the District, obtained through the Stockport Corporation from the Woodhead Reservoirs. During the year the water mains were extended by laying down some 200 yards of pipe. Nearly the whole of the District is now supplied with Manchester water, through the District Council's water mains. The Council have under consideration a scheme for giving a constant supply of water to the higher parts of the District.

The Stockport Corporation is also extending its mains into the portion of Brinnington recently added to Bredbury, to supply the farms and cottages.

Dairies, &c.—Regulations under the Dairies, Cowsheds and Milkshops Orders were made by the District Council on May 25th, 1898. The dairies and cow-sheds in the District are visited by the Inspector once a quarter. He reports them to be generally satisfactory. As, however, some of them are not so well situated and provided as they ought to be, he is preparing special reports thereon, which are considered by the Council as they come in. Suggested alterations as regards drainage, ventilation, and lighting of cowsheds, have been acted upon. As regards cowsheds generally, the Inspector reports them in a fairly satisfactory condition.

The Factory and Workshop Act has had attention. Inspection has been made, and the required particulars have been duly entered in the books provided for the purpose. Every factory, workshop, or workplace has been inspected, especially with regard to cleanliness, air-space, ventilation, draining, and sanitary conveniences. Where anything has been found unsatisfactory, improvements have been made. Houses and places where home-work has been carried on, have been kept under observation, and no home-work has been allowed on premises where infectious cases were housed. Lists of out-workers have been made, and where out-workers have resided in other Districts, lists have been forwarded to their District Councils.

The registers have been produced to and examined by the Sanitary Committee of the Council.

Bredbury and Romiley Urban District.

The Sanitary Inspector reports that he is satisfied with the means of escape in case of fire at all places where workpeople are employed, and that they are suitable to the buildings and number of employees.

There is one underground bakehouse in the District. This and the other six bakehouses have been inspected, and all were reported to be clean and in satisfactory condition.

Slaughter-houses.—There are 7 in use in the District All have been inspected and are reported on satisfactorily. One new slaughter-house has been erected during the year.

Main Drainage and Outfall Works.—The sewering of the greater part of the District is now complete. The Outfall Works for treating the sewage of Bredbury are at Wharf Meadow, Lower Bredbury. There are now upwards of 700 houses drained to these works. Romiley has separate Outfall Works, and to these 778 houses are drained. Both Works have been favourably reported upon, when samples of effluent have been taken for analysis.

The Medical Officer of Health is satisfied it would be to the advantage of the public health if every house could be connected with the sewers, and the existing ashpit privies done away with.

New Buildings.—Plans for 39 new buildings were passed in 1905. There were 42 houses erected in Bredbury, and 31 houses erected in Romiley, as well as 18 miscellaneous buildings.

Building Bye-laws.—The revised building bye-laws are in force. These were returned by the Local Government Board, duly approved, on February 8th, 1901.

Inspection.—The Medical Officer of Health and Inspector having during the year made many systematic visits of inspection in various parts, defects noticed were reported, and steps taken to remedy them.

Nuisance Abatement.—Fourteen notices to abate nuisances have been served during the year. In other instances the owner's attention has been drawn to nuisances, and their abatement obtained without formal notice. In all, 33 nuisances were abated.

Bredbury and Romiley Urban District.

Refuse Removal.—The work of removing nightsoil and ashpit refuse is undertaken by two contractors, who empty the receptacles as often as is necessary, in the opinion of the Officers of the Authority. Sometimes the emptying has to be done every week, in other cases monthly or quarterly. Very few complaints of neglect or carelessness have been made during the year, and the Medical Officer of Health has reason to believe that this work is attended to satisfactorily.

BROMBOROUGH

Urban District.

Medical Officer of Health—Dr. G. A. Kenyon.
Population at Census on April 1st, 1901—1,891.
Estimated Population in middle of 1905—1,983.
Area in acres—1,678.
Birth-rate per 1000 living—21.7.
Death-rate per 1000 living—11.6.
Death-rate from seven principal Zymotic Diseases—1.0.
Deaths under one year to 1000 births—93.

By a Local Government Board Order, which came into operation on September 30th, 1895, the Urban District and Civil Parish of Bromborough were extended to include part of the Civil Parish of Poulton-cum-Spital.

The population of the area which now forms the Bromborough Urban District was 1,740 at the Census in 1891. At the Census in 1901 the population of this District was 1,891. The increase in the population during the decennium 1891—1901 was therefore 151, that is 8.67 per cent. The estimate of the population made for the middle of the year 1905 is therefore not in excess.

In 1905 the births registered in the District numbered 43, and the deaths belonging to the District numbered 23. The birth-rate is 0.3 below the average for the ten years 1895—1904, and the death-rate is 0.2 below the average for the same ten years.

Four of those who died were under one year old, death in each case being ascribed to premature birth.

The year's mortality includes one death from diphtheria, one from diarrhœa, one from phthisis, one from other tubercular disease, two from bronchitis, one from pneumonia, one from heart disease, three from accidents, and one from suicide.

Bromborough Urban District.

Cases of Infectious Disease.—There were 12 cases of infectious disease notified, viz. :—3 diphtheria, 8 scarlet fever, and 1 enteric fever. All were isolated in Hospital. There was at no time any general spread of infection, the removal of patients to Hospital having had the effect desired.

Every case of infectious disease notified was duly investigated, disinfection was attended to, and action was taken for the discovery and remedy of sanitary defects on premises.

Inspection.—The Medical Officer of Health has visited the District from time to time, and advised the District Council and the Inspector on various matters of detail, in connection with the ordinary sanitary work.

Sewers and Sewage-disposal.—The District is well provided with sewers, which are well ventilated and regularly flushed. The sewage is treated by means of septic tanks and bacteria-beds at the Dibbinsdale and tile-yard outfalls. The sewers at Bromboro' Pool and the Magazine Village deliver into tidal water. Bromborough Village is sewered throughout.

At the Pool Works Village all the houses and cottages have water-closets, and the sewers are maintained in good order.

Refuse Removal.—The District Council contract for the emptying of ash-pits and privies monthly, and for the emptying of ash-bins as frequently as required. At the Pool Works Village movable bins are provided, which are emptied weekly.

Water-supply.—The Pool Works Village is supplied with water from Price's Patent Candle Co.'s deep wells. The remainder of the District is supplied with good water from the West Cheshire Waterworks (deep wells).

Inspector's Report. — Mr. Howard, Inspector of Nuisances, has made a careful and satisfactory Report. During the year there were 6 complaints received and dealt with. There were 320 houses specially inspected, and 325 were re-inspected. In 6 cases orders were issued for the structural amendment of premises, and the orders were duly carried out. At 6 houses defective drains were taken up and relaid, and at 3 houses the drains were cleansed and put in order.

Building.—Seventeen cottages and one villa residence were erected during the year. The drains were all carefully

tested and provided with ventilators. The drains of some old houses were ventilated. Two houses were enlarged.

Three privies were converted into water-closets.

Overcrowding.—At 5 houses overcrowding occurred, and the nuisance was abated.

Houses unfit for Habitation.—Three houses were closed as unfit for human habitation.

Dairies and Cowsheds.—There are seven registered dairies and cowsheds inspected. They are periodically whitewashed and kept in cleanly condition. The cowsheds are limewashed twice a year.

At 3 farms the cowsheds were lighted and ventilated during the year.

Factory and Workshop Act, 1901.—Twelve premises come under this act, viz.: 3 bakehouses, 2 blacksmiths' shops, 2 joiners' shops, 1 painter's shop, 1 plumber's shop, 1 shoemaker's shop, 1 cabinet maker's and 1 laundry. They are in good order, but in two instances separate closet-accommodation has not yet been provided.

All premises are inspected once a month.

Isolation Hospital Accommodation.—The District is contributary to the Joint Hospital Board, and thus able to isolate infectious cases. The Pool Works Company have their own Hospital for infectious cases.

BUGLAWTON

Urban District.

Medical Officer of Health—Dr P. M. Davidson.
Population at Census April 1st, 1901—1,452.
Estimated Population in middle of 1905—1,452.
Area in acres—2,911.
Birth-rate per 1,000 living—35.1.
Death-rate per 1,000 living—19.2.
Death-rate from seven principal Zymotic Diseases—3.4.
Deaths under one year to 1,000 births—254.

The population of this Urban District was 1,382 at the Census in 1891, and 1,452 at the Census in 1901. The increase

in the population during the decennium 1891—1901 was thus 70, that is 5 per cent. The estimate of the population made for the middle of the year 1905 assumes that the population has not increased since the Census.

In 1905 the number of births registered was 51, and the number of deaths registered was 28. No one belonging to Buglawton died at the Workhouse at Arclid. The birth-rate is 5.4 above the average in this District in the 10 years 1895-1904, and the death-rate is 4.4 above the average in the District in the same 10 years. Among the deaths recorded were 3 from measles, 2 from whooping-cough, 2 from enteritis, 2 from tubercular disease, 1 from cancer, 2 from bronchitis, 4 from pneumonia, 5 from premature birth, and 1 from heart disease.

Infant Mortality.—As 13 of those who died were infants under a year old, the deaths of infants were equal to 254 per 1,000 births. This is remarkably high. In the 10 years 1895-1904, the deaths of infants were equal to only 98 per 1,000 births. The high-rate is somewhat explained by the fact that 5 infants died from premature birth, and that measles, whooping-cough, bronchitis and pneumonia account for 5 other deaths.

Cases of Infectious Disease notified.—Nine cases of infectious disease were notified, viz.:—1 diphtheria, 4 scarlet fever, 2 enteric fever and 2 erysipelas. These were isolated as far as practicable at home.

Measles became epidemic in March, and by the middle of May, when the epidemic came to an end, most of the children in the District had been infected. The school was closed for some time, but this did not seem to have any good effect. The disease was of a severe type, and was the cause of three deaths.

Whooping-cough was prevalent in the first three quarters of the year and caused 2 deaths.

Scarlet Fever.—The four cases of this disease were all of a mild type. No case was notified after September.

Enteric Fever.—One of the cases of this disease occurred in a house where another member of the family suffered from it at the end of 1904. The drainage was defective and was probably the cause. The other case appears to have been infected outside the District.

Influenza.—A rather severe outbreak of this disease took place in February, but there were not any deaths directly attributed to it.

Isolation Hospital Accommodation.—Early in 1902, the Buglawton District Council, in conjunction with the Town Council of Congleton, and several neighbouring District Councils, arranged provision for the isolation of small-pox cases at Arclid.

Disinfection of infected houses, clothing, &c., was attended to, as far as practicable.

Factory and Workshop Act.—The 10 premises within the District were all inspected in 1905. No defects were observed and there was therefore no occasion to serve any Notice.

Dairies and Cowsheds.—The premises of the 3 retail milk sellers were all inspected and found in good order.

Sewerage Scheme.—An arrangement with the Borough of Congleton, for Buglawton to be drained to the Congleton outfall-works, and the sewage treated there, is all but completed. Proper sewers will of course be laid throughout Buglawton.

Ashpits, &c.—The ashpits and privies are emptied regularly, and kept in as good order as is practicable.

The Medical Officer of Health inspected the whole District several times in the course of the year.

CHEADLE AND GATLEY

Urban District.

Medical Officer of Health—Dr. J. H. Godson.
Population at Census on April 1st, 1901—7,916.
Estimated Population in middle of 1905—8,840.
Area in acres—5,086.
Birth-rate per 1,000 living—19.9.
Death-rate per 1,000 living—12.3.
Death-rate from seven principal Zymotic Diseases—0.4.
Deaths under one year to 1,000 births—108.

This Urban District was constituted by a Local Government Board Order, which came into operation in August, 1886. It was formed by uniting Stockport Etchells (including Gatley) with part of Cheadle (including Cheadle Hulme, Outwood, and

part of the former parishes of Cheadle Bulkeley and Cheadle Mosley). The area of these two portions of the District and their Census population in 1901 were as follows :—

	Area in Acres.	Census Population.
Stockport Etchells ...	1572	1776
Part of Cheadle	4240	9044
	5812	10820

By Local Government Board Order. No P. 1,711, which was confirmed by Local Government Board Provisional Orders Confirmation (No. 11) Act, 1901, and came into operation on November 9th, 1901, part of the Civil Parish of Cheadle and the Urban District of Cheadle and Gatley was added to the Civil Parish and County Borough of Stockport. The area of the Urban District was thus reduced by 726 acres, and the Census population was thus reduced by 2,904 persons. The figures at the date of the Census for the reduced areas were therefore as follows :—

Area in Acres	5086
Census Population (1901)	7916

The population of the whole District includes 140 enumerated at the Barnes Convalescent Hospital (Branch of the Manchester Royal Infirmary) and 431 enumerated at the Manchester Royal Lunatic Hospital, including St. Anne's Hospital, Brookside House, and Beech House The Census population, exclusive of these institutions, was therefore 7345.

It is estimated that from the date of the Census to the middle of the year 1905 the population was increased by 924. The entire population of the district at midsummer 1905 was thus 8,840. Exclusive of the 2 Institutions named above, it was 8,155. The population of the Barnes Convalescent Hospital was 152, and the population of the Manchester Royal Lunatic Asylum was 533. The population of the Warehousemen and Clerks' Schools was 262. Deducting this also the Medical Officer of Health calculates his birth-rate and death-rate on a population of 7893.

During 1905 the number of births registered in the District was 157, and the number of deaths registered in the District (excluding 49 at the Public Institutions referred to) was 97. Owing to the area of this District having been so much reduced in November, 1901, the statistics of the last four years cannot be properly compared with an average based on years prior to 1902. However, taking the figures for what they are worth, the birth-rate for 1905 was about 4.8 below the average in 1895—1904,

and the death-rate of 1905 was about 1.5 below the average in the same 10 years.

The number of deaths from the 7 principal zymotic diseases was 2, viz. :—1 diphtheria and 1 diarrhœa. There were also 2 cases of epidemic influenza.

The District is mainly residential and agricultural. The portion which has been taken from the District contains most of the local manufactories. There only remain two bleach works, and these are well constructed. There are also a few brickmaking yards, mostly at Cheadle Hulme and Adswood.

Infant Mortality.—Seventeen of those who died in 1905 were infants under a year old. This number is equal to 108 per 1000 births, representing a fairly low death-rate.

Cases of Infectious Disease notified.—During 1905 there were 39 cases of infectious disease notified, viz. :—4 diphtheria, 26 scarlet fever, 1 enteric fever, and 8 erysipelas. One of the cases of scarlet fever occurred at the Barnes' Convalescent Hospital, and 5 cases occurred at the Warehousemen and Clerks' School. The case of enteric fever was at the Barnes Convalescent Hospital. Two of the cases of erysipelas were at the Royal Asylum. Of the cases belonging to the District, 12 were sent to the Isolation Hospital, viz. :—1 diphtheria and 11 scarlet fever.

Action taken with reference to Infectious Disease.—As soon as a case of infectious disease is notified, the Medical Officer of Health at once visits the house, and with the Medical Practitioner in attendance, and the help of the Inspector, takes all possible precautions to prevent the spread of infection. When the Practitioner in attendance on the case reports that the house is ready for disinfection, it has been usual to fumigate it with sulphur or formaldehyde. This is the only means available at present, and is not reliable. Bedding and articles of clothing are sometimes sent to the Stockport Disinfecting Station, to be disinfected by steam; but this method of dealing with infectious material is expensive and inconvenient.

A Disinfecting Apparatus needed.—To insure that bedding and clothing are thoroughly disinfected, they ought to be disinfected by steam. A steam disinfector is greatly needed, and the Medical Officer of Health (who presented a Special Report upon the subject in February, 1898) hopes that the District Council will obtain one for the use of the District.

Cheadle and Gatley Urban District.

Bacteriological Examinations.—At the end of the year 1899 the District Council resolved that arrangements be made with Professor Delépine, of the Victoria University of Manchester, for having material from suspected cases of diphtheria and typhoid fever examined bacteriologically. This will be of great assistance in the diagnosis of doubtful cases, and may be the means of checking serious outbreaks of disease. During the year 3 specimens of pathological material were sent to Professor Delépine

Vaccination.—There appears to have been no falling off in the efficiency of the arrangements made for the vaccination of children.

Chicken-pox.—This disease was very prevalent among the infants attending the Cheadle and the Cheadle Heath Day Schools, during the months of April and May. In some cases it was of a very severe type, but on the whole it was of a mild type.

Mumps and Wohoping-cough became very prevalent among children attending the Cheadle Day School. There has been hardly any infectious disease in any part of the district except Cheadle. Several adults were effected with mumps.

Scarlet Fever.—As already stated 5 of these cases occurred at the Warehousemen and Clerks' Schools. The outbreak commenced in 1904, and it was not till April, 1905, that the last case was notified. As one case occurred at the Convalescent Hospital, there were only 20 cases belonging to the District, viz. : 17 in Cheadle, 2 in Stockport Etchells, and 1 in Cheadle Hulme. The Medical Officer of Health submits the following Report on the scarlet fever notified to him in 1905.

"Of the 17 cases in Cheadle, twelve of these occurred in the same neighbourhood, but at different times ; of these 12 cases, 7 cases were notified from the same family. The first case was notified in May and was of such a very mild type that it was very difficult to diagnose ; in a short time the other members of the family developed sore throats and a rash, two of which were sent to the Baguley Sanatorium as suffering from scarlet fever. Dr. Rhodes, the medical superintendent, confirmed the diagnosis. They were kept in the hospital about 10 weeks and then sent home. At the end of August (about six weeks after their discharge from the Hospital) I received two more notifications from the same family and found these two patients again suffering from sore throat and a rash. They were both sent again to the Baguley Sanatorium, at Dr. Rhodes' suggestion, whom I consulted in the matter, as it is rather a rare occurrence to have two attacks

of scarlet fever within four to six months, and that this was a second attack Dr. Rhodes had not the least doubt. One case, owing to complications, proved fatal during the second attack. I was unable to trace the primary cause of the infection, but no doubt as there were other cases in the street, there was a common source of infection, although I could not trace it to the milk supply or school attendance. Of the remaining five cases, which occurred in Cheadle, one case was brought to Cheadle while suffering from the disease unknown to the parents; another case was peeling when first seen by its medical attendant; another case occurred in a new house which was very damp and hardly fit to live in; the other two cases were of an exceedingly mild type and require no special comment. Of the two cases which occurred in Stockport Etchells, one was a boy who attended a large school outside the District and had most probably taken the infection from outside the District; the other case was thought to have been brought on by the patient wading during October in some very cold water. The case at Cheadle Hulme was a sporadic case and calls for no special comment.

"Eleven cases of scarlet fever were sent to the Baguley Sanatorium from the district proper.

"The case notified from the Barnes Convalescent Hospital was sent at once to the Monsall Fever Hospital.

"The five cases notified from the Warehousemen and Clerks' Schools occurred during February, March, and April, and were sent to the Baguley Sanatorium, where arrangements had been made to take them in, instead of having them treated in their own Sanatorium; this completely stamped out an outbreak which had been going on since the middle of the previous year. One of the cases sent to the Baguley Sanatorium proved fatal."

Diphtheria and Membranous Croup.--Of the four cases notified, two occurred in Cheadle, one in Cheadle Hulme, and one in Stockport Etchells. In two cases only was a bacteriological examination made of pathological material taken from a patient. In one case the result was positive, and in the other negative. The exact origin could not be traced in any of the cases. In one instance the patient had been suffering from mumps, just before developing the disease. Antitoxin was used in the treatment of this case, which ended fatally. The other cases were mild in type. Full precautions were taken to prevent the spread of infection. One case from Gatley was removed to the Baguley Sanatorium, where it developed scarlet fever.

Cheadle and Gatley Urban District.

Enteric Fever.—The only case of this disease as already stated occurred at the Barnes Convalescent Hospital, and was promptly sent to Monsall Fever Hospital. The diagnosis was confirmed by bacteriological examination.

Antitoxin.—The Medical Officer of Health in his Annual Report for 1904, suggested that antitoxin should be stored by the Authority, for the convenience of Medical Practitioners in the District, and issued gratuitously in suitable cases, and at cost price in others. He again brought the matter before the District Council in 1905, and instructions were given to keep a supply.

Erysipelas.—Two of the cases of this disease were at the Royal Asylum, where 11 cases occurred in 1904. Five cases were in Cheadle, and one case in Cheadle Hulme. They were all mild in type.

Influenza was never very prevalent, and most of the cases were of a mild type. Two deaths were registered as due to influenza and its complications.

Summer Diarrhœa was not as prevalent during the late summer months and early autumn as in previous years, although several cases occurred among infants and young children. Six deaths were registered as due to diarrhœa and enteritis; 4 of these were of infants under one year of age, and the whole 6 were of children under 15 years of age.

Isolation Hospital Accommodation.—In 1903, the District Council of Cheadle and Gatley made an arrangement with the Withington Urban District Council for admission of cases of scarlet fever, diphtheria, and enteric fever, into the Baguley Sanatorium. Three beds were retained, which appeared quite sufficient for the needs of the District. When Withington was included within the area of the Corporation of Manchester, an agreement was made with the Corporation for three beds, as before, to be retained at Baguley Sanatorium, for the use of patients from Cheadle and Gatley.

The District Council have also, jointly with Heaton Norris Urban District Council, erected an Iron Hospital, of eight beds, on the vacant land near the Sewage Outfall Works, for cases of small-pox. Although quite ready for the reception of patients it has not been used.

Cheadle and Gatley Urban District.

The Barnes Convalescent Hospital, by agreement, send their infectious cases to the Monsall Hospital; and the Warehousemen and Clerks' School till the beginning of 1905 used their own Sanatorium. They then made arrangements for their scarlet fever cases to be admitted into their Baguley Sanatorium.

Water-supply.—The supply is from the Stockport Corporation Waterworks, and is sufficient for the needs of the District. There was no curtailment of the supply in any part of the District during 1905, but at times the water was very discoloured, and so turbid as to be hardly fit for domestic purposes.

New Houses.—Fifty nine new houses were built and occupied during the year. The majority of these were built in Cheadle Hulme Ward. Very few were cottages.

Improvements.—The work of paving, sewering and channelling several private streets in Cheadle Hulme, begun in the previous year, was completed. There are still some private streets which are in a very bad state, especially in wet weather. The sewers in several streets have been connected up with the main sewer. Several houses have been redrained and connected up with the sewage system, and several privies and ashpits have been done away with, and replaced by water-closets. The lighting of one or two streets has been improved.

Unhealthy Houses.—Five houses were condemned as unfit for human habitation in 1905. Two of these were pulled down. The others can probably be so altered as to be made fit for occupation. One was unfit for habitation owing to its filthy condition.

Schools.—The Medical Officer of Health inspected the elementary schools from time to time, and found the sanitary arrangements satisfactory, and the playgrounds dry and well drained. In one instance the playground was noticed to be too small.

Schools have been frequently visited, at the request of the Masters, to examine pupils suspected of being infected, when any infectious disease is prevalent.

Main Drainage and Outfall Works.—The sewerage scheme was completed during the year 1901. However, some

extensions were effected during 1903 and 1904. The District is now provided with an efficient sewerage system in good working order.

The effluent from the filter-beds has been reported good, each time a sample had been analysed for the Mersey and Irwell Joint Committee.

There are still 14½ acres which can be used for land filtration when occasion arises. At present this land is not wanted, owing to a portion of the District having been incorporated with Stockport.

The sewerage system, although the original scheme was completed, has been considerably extended during 1905; about one and three-quarter miles of piping have been laid in Cheadle Hulme Ward, extending from Church Road to the boundary at Moss Lane.

Pollution of a Stream.—Several complaints have been made of effluvia from a stream, known as the Micker Brook, during the hot weather in the summer. The Inspector was instructed to take samples at various parts of the stream, and it was found that the stream most probably was being polluted by the effluent from some works on the banks. Steps have been taken to abate the nuisance. The Mersey and Irwell Joint Committee have the matter in hand.

Factory and Workshop Act.—This new Act came in force on January 1st, 1902. It requires Medical Officers of Health to report specifically on the administration of the Act in Workshops and Workplaces. There are 51 workshops in the District, including 9 domestic workshops, 11 retail bakehouses, 2 laundries, and 29 other workshops.

The chief workshops' industries are bleaching, brick-making, and silk hand-loom weaving. The premises are all clean, the air-space per head is well above the limit required by the Act, and the ventilation was found sufficient. The sanitary conveniences were found adequate and suitable. All are regularly visited by the Inspector, and occasionally by the Medical Officer of Health.

The general sanitary condition of the bakehouses was found good. There are no underground bakehouses.

Two sanitary defects were discovered, and steps were promptly taken to remedy them.

Dairies and Cowsheds (46 in all) have been Inspected by the Medical Officer of Health and Inspector. On the whole, the premises have been clean and the animals well kept. Several alterations and improvements as regards lighting and ventilation have been carried out. The Inspector, in 1903, drew up a report on the lighting, ventilation, and air-space per cow, of every cowshed in the District, and the District Council appointed a Sub-Committee to go into the matter. Where they considered alterations necessary, suggestions were made. With few exceptions the work suggested has been done.

Slaughter-houses.—These (4) are all still unlicensed They were inspected and found clean and well kept.

In one case a defective floor was noticed, and put in order in compliance with the requirements.

No unwholesome food, so far as is known, has been exposed for sale in the District.

No Offensive Trades, so far as is known, are carried on in the District.

No Common Lodging-houses are in the District.

Inspector's Report.—The Inspector (Mr. Fernley) reports that during 1905, there were only 10 complaints (exclusive of those in respect of House Refuse Removal), and that 1,475 houses were inspected, and 341 houses were re-inspected. Thirty-three houses were entirely re-drained and connected to the Public Sewers. The drains of 16 other houses were put in order. At 36 houses ashpits were abolished, and dust bins provided in lieu thereof. There were also 43 waste pipes and rain pipes, repaired and disconnected from drains.

Observations were taken by the Inspector on the amount of black smoke emitted from chimneys of various works, [illegible] in all. In 1899, the District Council agreed on a time limit for the emission.

Refuse Removal.—The emptying of ashpits, etc., is supervised by the Inspector. The number of loads of refuse removed in 1905 was 3,372.

Recreation Ground.—The original plot of land has been exchanged for one nearer the Stockport main road and more convenient for the children. It has been fitted up with a shelter and swings, and is now very much used and appreciated by the children.

Cheadle and Gatley Urban District.

The Council have also provided a temporary ground for the children in Gatley; it was opened in the summer.

Cemetery.—It has been stated in previous Reports that the various burial grounds in the District are almost full, and in the Report for 1900, that land has been found for a cemetery, and that plans for laying out the same had been prepared. This land was purchased in 1901, and the work of laying it out has since been in progress. The Cemetery was formally opened by the Chairman of the District Council in April, 1903; and the Church of England part was consecrated by the Bishop of the Diocese in June. It has since been used for interments.

COMPSTALL

Urban District.

Medical Officer of Health—Dr. C. H. Hibbert.
Population at Census on April 1st, 1901—875.
Estimated Population in middle of 1905—880.
Area in acres—903.
Birth-rate per 1,000 living—26.3.
Death-rate per 1,000 living—14.7.
Death-rate from seven principal Zymotic Diseases—1.1.
Deaths under one year to 1,000 births—173.

By Local Government Board Order, No. 42,748, which came into operation on April 1st, 1902, the Civil Parish of Compstall was constituted an Urban District. The population of Compstall at the Census, 1901, was 875, and the population of the same area at the Census in 1891 was 1,012. The decrease in the population during the decennium, 1891—1901, was therefore 137, that is 13.5 per cent.

Before being constituted an Urban District, Compstall formed a portion of Stockport Rural District.

The District lies on the north-west of the River Etherow, which separates it from the Parish of Ludworth, in the County of Derby. On the north is the Borough of Hyde, on the west and south-west is the Urban District of Bredbury and Romiley, and on the east and south-east is the County of Derby.

The District is hilly, and the subsoil is chiefly clay and sand, with underlying rock.

Compstall Urban District.

The greater portion of the houses are situate at the lower part, and on the south-east side of the hill on which the District lies. This part is urban in character, the remainder of the District being rural, and consisting chiefly of farmhouses and agricultural land.

During 1905 the number of births registered was 23, and the number of deaths registered (including the death of a resident elsewhere) was 13. The birth-rate compares favourably with the Compstall birth-rate of 1902-1904. The death-rate is exactly equal to that recorded in 1904, but higher than the death-rate in 1902-1903.

The causes of the 13 deaths were as follows :—1 enteric fever, 2 enteritis, 1 other tubercular disease, 1 cancer, 1 premature birth, 1 marasmus, 1 intestinal obstruction, 1 heart disease, and 2 senile decay.

Infectious Disease.—The only case of infectious disease notified was one of enteric fever, which proved fatal. The cause of infection was proved to be due to eating infected raw mussels.

The Medical Officer of Health recommends that measles and phthisis should be made notifiable.

Action taken to Prevent Spread of Infection.—On a case of infectious disease being notified, the premises are examined, and if defects are found the owners are required to remedy them. The patients are isolated as far as practicable, and the rooms, bedding, and clothes are afterwards disinfected. Disinfectants are supplied free. Parents are instructed to keep members of infected families from attending school or mixing with other children till all risk of infection is over.

The Headmaster of the District School also affords much assistance by reporting any suspected cases of infection.

Isolation Hospital Accommodation.—The District Council have made arrangements with the High Peak Hospital Committee for cases requiring isolation to be admitted to the Chinley Isolation Hospital. The Medical Officer of Health is of opinion that the needs of Compstall in this respect will thus be met.

Disinfecting Apparatus needed.—There is no disinfecting apparatus, and one should be provided.

Water-supply.—This is obtained from springs on the uplands, and stored in two reservoirs. The water is soft and clear, and of good quality. The supply is ample. The reservoirs are cleaned by lime every spring.

The rural parts are supplied principally from springs and shallow wells. These (especially the shallow wells) require careful protection from contamination.

Industries.—The industry of the District is that of spinning and weaving, which is carried on at Compstall Mills by the Calico Printers' Association. The majority of the inhabitants of the District are employed at these Mills, the remainder of the adult population being employed at Works outside the District, or on the farms.

The Printworks are still closed.

Factory and Workshop Act, 1901.—The Medical Officer of Health and Sanitary Inspector have carefully inspected the Mills. The rooms were whitewashed and clean. The ventilation was good and the closets were in order. The pails are emptied regularly and disinfected.

Inhabited Houses.—In July, 1905, there were 215 in the District. These meet present requirements. The houses are well-built and dry, and there are plenty of open spaces. No new houses were built in 1904 and 1905.

Refuse Removal.—the removal of excreta and other refuse is done regularly, and the ashpits are well disinfected after being emptied. A portion of the household refuse is removed to a tip a good distance away, and buried.

The Sewers, which carry slop water only, have their outlet in a reservoir, which stores water for a turbine.

Eventually the sewage is discharged into the river.

Dairies and Cowsheds have been inspected, and were found clean, ventilated, and in good condition.

Dairies Regulatons.—Under the Conforming Order for the Constitution of the Compstall Urban District, any regulations under the Dairies, Cowsheds, and Milkshops Order of 1885, and any Bye-laws of the Stockport Rural District Council or their predecessors, in force on the 14th April, 1902 (the date of the first meeting of the Council), are to be deemed to be in force as if made by the Compstall Urban District Council.

Slaughter-house.—There is only one slaughter-house in the District. This is kept clean and sanitary, but the lair in connection therewith requires draining.

Compstall Urban District.

Unsound Meat.—The Medical Officer of Health and Inspector acting on information received, visited a farm in the District on September 17th, 1905, and inspected the carcase of a cow prepared for sale. The meat was found to be unsound and unfit for human food, and an application was made to a Justice of the Peace for an Order to destroy the carcase. This order was obtained, and the carcase was destroyed forthwith. It appeared that the animal had died from parturient fever. Proceedings were taken by the District Council against the owner, who was convicted and fined £10 and costs at the Stockport County Police Court on October 12th, 1905.

No Offensive Trades are carried on in this District

Nuisance Abatement.—The Inspector reports that 17 cases of nuisance were entered in his book during the year. Five formal notices were served, and these in due course were complied with. The other 12 nuisances were abated on request.

ELLESMERE PORT AND WHITBY

Urban Districts.

Medical Officer of Health—Dr. G. A. Kenyon.
Population at Census on April 1st, 1901—4,082.
Estimated population in middle of 1905—4,700.
Area in acres—1,261.
Birth-rate per 1,000 living— 33.8.
Death-rate per 1,000 living—12.1.
Death-rate from seven principal Zymotic Diseases—0.8.
Deaths under one year to 1,000 births—126.

By Local Government Board Order, No. 42,750, which came into operation on April 1st, 1902, the Civil Parish of Whitby was constituted an Urban District named Ellesmere Port and Whitby. The population of this area at the date of the Census in 1901 was 4,082. The population of the same area at the date of the Census in 1891 was 5,107.

During 1905 the number of births registered in this District was 159, and the number of deaths belonging to the District (excluding the death of one stranger and including the deaths of 3 persons belonging to the District which took place in Public Institutions beyond the District) was 57.

Ellesmere Port and Whitby Urban District.

The birth-rate for 1905 (33.8) does not compare favourably with the birth-rate for 1904 (37.9), but compares favourably with the birth-rate for 1903 (30.8). The death-rate for 1905 (12.1) is a little better than the death-rate in 1903 (12.7) but not as low as the death-rate in 1904 (11.6).

Twenty of those who died were infants under a year old, and only 4 were persons upwards of 65 years old.

Four deaths were due to the principal zymotic diseases, viz.:—1 measles, 1 scarlet fever, 1 enteric fever, 1 diarrhœa. There was 1 death due to puerperal fever. Four deaths were due to enteritis, 2 to phthisis, 2 to cancer, 2 to bronchitis, 4 to pneumonia, 2 to other diseases of the respiratory organs, 6 to premature birth, and 3 to accident.

Cases of Infectious Disease notified.—There were 26 cases of infectious disease notified, viz.: 9 scarlet fever, 2 enteric fever, 1 puerperal fever, and 14 erysipelas. Four of the cases of scarlet fever and 1 of the cases of enteric fever were sent to the Spital Isolation Hospital. Other cases were, as far as practicable, isolated at home. There was, therefore, very little infectious disease (exclusive of erysipelas) during the year. The houses infected were visited, and instructions given as required for isolation and disinfection.

Isolation Hospital Accommodation is provided for this District and other parts of the Wirral Union by the Wirral Joint Hospital Board.

Inspection.—The Medical Officer of Health visited the District from time to time, and gave advice on points of detail in connection with sanitary work.

Water-supply.—The District is supplied with water from the West Cheshire Waterworks.

Sewering.—The District is sewered where built upon, except as regards a few outlying dwellings, such as those at Whitby Heath. Along the main road 566 yards of new sewer has been laid.

New Houses and Streets.—During the year the building of 110 new houses has been supervised, and 5 new streets have been properly made and sewered. The new houses were certified to be in accordance with the bye-laws.

Ellesmere Port and Whitby Urban District.

Building Bye-laws.—The model Building Bye-laws are in force in the District.

Removal of Excreta.—The disposal of excreta is partly by water-closets, and partly by combined ashpit-privies. The latter are constructed entirely above ground, and kept in as good order as practicable. All refuse removal is done by a contractor, employed by the District Council. The contract provides for the emptying of privies and ashpits once a month at least, and the emptying of ash-bins once a week. There were 150 new dust-bins provided during 1905. New houses are always provided with dust-bins in place of ash-pits.

Report of Surveyor and Contractor.—Mr. Hudson, the Surveyor and Inspector of Nuisances, makes a very complete and satisfactory report. He states that during the year 150 houses were specially inspected and re-inspected, 37 backyards were paved or repaired, and in 42 houses privies were converted into waterclosets. No case of overcrowding was reported or discovered.

Sewer Flushing.—The main sewers are regularly flushed once a month.

Dairies, &c.—Five cowsheds have been regularly inspected.

Slaughter-houses.—Two slaughter-houses have been regularly inspected.

Factory and Workshop Act.—Attention is being given to the carrying out of this Act. A register has been formed of the factories and workshops in the District. There are 6 factories and 6 workshops, all of which were carefully inspected. No defects were observed, and no notices were required.

Canal Boats were all inspected about once a month. There were 25 boats, all being in good order.

HALE

Urban District.

Medical Officer of Health—To May 20th, Dr. C. W. Jones.
After May 20th, Dr. T. A. Rothwell.
Population at Census on April 1st, 1901—4,562.
Estimated Population in middle of 1905—6,736.
Area in acres—1,288.
Birth-rate per 1,000 living—19.0.
Death-rate per 1,000 living—9.6.
Death-rate from seven principal Zymotic Diseases—0.6.
Deaths under one year to 1,000 births.—101.

By a Local Government Board Order, which came into operation on April 1st, 1900, the Civil Parish of Hale was constituted an Urban District.

The population of this District was 4,562 at the Census in 1901, and the population of the corresponding area was 2,575 at the Census in 1891. The increase of the population during the decennium 1891-1901 was thus 1,987; that is 77 per cent. The estimate of the population made for the middle of 1905 (6,736) seems rather high. It is based on the number of inhabited houses.

During 1905 the number of births was 128, and the number of deaths (including 7 deaths of residents who died elsewhere) was 65. The number of births in 1904 was 114, the number in 1903 was 124, the number in 1902 was 100, and the number in 1901 was 83. The number of deaths in 1904 was 47, the number in 1903 was 42, the number in 1902 was 57, and the number in 1901 was 63. The birth-rate in 1905 was just below the average, and the death-rate in 1905 was also just below the average.

In 1905 there were 4 deaths from the principal zymotic diseases, viz.:—1 from membranous croup, 1 from enteric fever, and 2 from diarrhœa. There was 1 death from influenza, there were 3 deaths from phthisis, 2 from other tubercular diseases, 3 from cancer, 4 from bronchitis, 7 from pneumonia, 2 from alcoholism, or cirrhosis of the liver, 3 from premature birth, and 5 from heart diseases.

Cases of Infectious Disease notified.—There were 45 cases of infectious disease notified, viz.:—16 diphtheria, 21 scarlet fever, 6 enteric fever, 1 puerperal fever, and 1 erysipelas. Of these, 9 cases were removed to Baguley Sanatorium, viz.:—2 diphtheria, and 7 scarlet fever. One of the cases of enteric fever was removed to Lloyd's Fever Hospital, Altrincham.

Hale Urban District.

A few notifications were received from the Heads of Schools, of diseases not required to be notified, viz. :—1 measles, and 4 chicken-pox.

Diphtheria occurred mainly at the beginning and the end of the year, the months of June, July and August being free from notifications of this disease, and also the months of April and November. The greatest number recorded in one month was 4, in February.

Scarlet Fever has been more or less endemic throughout the year. The only months in which cases were not reported were February and November. During October, 6 cases were notified. In most of the cases no source of infection could be traced. One patient, certainly, and probably two others contracted the disease outside the District.

Enteric Fever.—The cases of this disease were reported in January, March, May, August, and September. In one case probably, the patient came into the District suffering from the disease.

Bacteriological Diagnosis.—Since 1900, facilities have been given to Practitioners to have morbid products from suspected cases of diphtheria and enteric fever tested bacteriologically.

During 1905, 15 swabs from patients believed to have diphtheria, were sent for examination, four of which gave positive results, and 11 negative results. Four specimens of serum from patients believed to be suffering from enteric fever were also sent for examination, but negative results only were obtained.

The Infectious Disease (Prevention) Act, 1890, was adopted by the District Council in November, 1891. This should prove of much value.

Isolation Hospital Accommodation.—The Hale Urban District succeeds to the arrangements already made by the Bucklow Rural District Council and the Bucklow Joint Hospital Board. There has thus been accommodation for cases of infectious disease at Baguley since December 8th, 1902, the day on which the Withington Hospital was formerly opened for the reception of patients.

Water-supply.—The water supplied to Hale is satisfactory. It is important that the water mains should be regularly flushed; and it is not less necessary that householders should systematically cleanse cisterns and domestic filters.

Dairies.—All premises used by purveyors of milk, including cowsheds, have been carefully inspected, and steps have been taken to remedy defects noticed. Milk being derived from many farms, within and without the District, makes supervision very difficult of accomplishment.

The Urban District Council have made Regulations under the Dairies, Cow-sheds, and Milkshops Order.

New Houses.—During 1905 the number of inhabited houses has been increased by the addition of 101 new houses.

New Roads.—During 1905 the following roads in the District were completed, viz. :—Delahays Road, Cecil Road, Lower Queen's Road, Harrop Road, and Stamford Park Road. In all 1667 lineal yards of road have been made.

During the summer months an experiment with regard to dust prevention was made on Ashley Road, the road over which most traffic passed. This experiment consisted in distributing over the surface a thin layer of hot liquid tar, and scattering over this a mixture of sand and lime. The portion of road thus treated is drier and cleaner now than adjoining roads. Other roads might suitably be treated in a similar way, for no doubt disease is often distributed along with road dust.

The various roads in the District during 1905 have been well kept. As a new road foreman has been recently appointed, it is probable that this work will continue to have full attention.

Sewerage.—The system in vogue in this District is the dual system. The major portion of the sewage from the north side of Hale Road is dealt with at the Altrincham Sewage Farm, while the sewage from the south side of Hale Road, and a small portion of the north side, is dealt with at the Sewage Farm at Ashley Heath.

The methods employed at Ashley Heath during the year were as follows :—

(a) By septic tank, followed by bacteria beds and broad irrigation.

(b) By Chemical treatment (alumino-ferric precipitation) followed by broad irrigation.

(c) By settling tanks and broad irrigation.

The reports on the effluent, by the Mersey and Irwell Committee have been favourable, except on one occasion, at a

time when a portion of the land could not be used, owing to re-draining operations.

The sewers in the District have been generally kept in good working order during the year, and few complaints have been received with regard to them. Unfortunately the sewer from Stamford Park Road was not available till the close of the year. This sewer is now ready for use.

During the year, that part of the North Watershed scheme between Queen's Road and Bancroft Road, was completed, and towards the end of the year that portion between Grove Lane and Hale Lodge was commenced, and is now nearing completion.

Disinfection.—The method of disinfection still in use here is by formaline gas. Strong points in its favour are the absence of deleterious action on household effects, and the facility with which the gas can be generated. The disinfection of bedding and other bulky articles is at present satisfactorily done, upon payment, at the Altrincham steam disinfector.

The Factory and Workshop Act, 1901, which came in force on January 1st, 1902, confers greatly increased powers of Inspection on a Medical Officer of Health in dealing with wash-houses, millinery and tailoring establishments, etc., of a quasi-private nature, and appears to be specially adapted for dealing effectively with such small concerns as may exist in Hale. In this District, bakehouses, builders' workshops, bootmaking and repairing shops, milliners' and tailors' shops, etc., are such as come under the operation of the Act. The special provisions relating to underground bakehouses which came into force on January 1st, 1904, were dealt with by the appointment of a Sub-Committee, which visited, inspected, and reported upon all bakehouses in the District. It was found necessary to condemn one underground bakehouse, and to require alterations in the ventilation, etc., of another one. The underground bakehouse has been replaced by one above ground, and the alterations in ventilation are almost completed.

There were 28 workshops and 1 homeworker's premises inspected in 1905. Only one defect was noticed, and this was promptly remedied.

Refuse Removal.—The emptying of ashpits and complaints relative thereto have had the attention of the Inspector. During the year 1,387 cart loads of refuse were removed.

Nuisance Abatement.—The Inspector of Nuisances Mr. F. E. Boaz, has during the year given attention to complaints made to him, or discovered by him, in all 191 inspections were made.

No Slaughter-houses or Offensive Trades exist in this District.

HANDFORTH

Urban District.

Medical Officer of Health—Dr. Isaac Watts.
Population at Census on April 1st, 1901—911.
Estimated Population in middle of 1905—921.
Area in acres—1,312.
Birth-rate per 1,000 living—22.8.
Death-rate per 1,000 living—10.8.
Death-rate from seven principal Zymotic Diseases—0.
Deaths under one year to 1,000 births—95.

All that remained in Stockport Rural District in 1903 was the Civil Parish of Handforth. This Parish lies between the Urban District of Cheadle and Gatley on the north, and the Urban District of Wilmslow on the south. The subsoil is sand and clay.

This District obtained Urban powers, being constituted the Urban District of Handforth in September, 1904. Early in October, an Urban District Council was elected, and in November and December officials were appointed, and approved by the Local Government Board.

The District is mainly agricultural. There is one bleach works (worked by the Bleachers' Combine) which gives employment to about 140 men, women, boys and girls. The works are well-constructed, and the health of the operatives is good. There is also one small brewery in the District.

During 1905 the number of births was 21, and the number of deaths (excluding 1 not belonging to the District) was 10.

The deaths included 1 from phthisis, 1 from bronchitis, 1 from alcoholism, 1 from heart disease, 2 from cerebral hæmorrhage, 2 from senile decay, and 1 from pernicious anæmia.

The only case of infectious disease notified was one of scarlet fever, the patient was a child, and the disease was of a mild type.

Antitoxin has been provided for use, should cases of diphtheria be notified.

No Isolation Hospital Provision has been made. "The Council would do well to arrange with some Authority having a Hospital, for the isolation of cases of infectious disease."

Factory and Workshop Act.—The bleach-works and brewery, already referred to, have been inspected. They are clean, well ventilated, have sufficient air-space, and suitable sanitary accommodation.

Housing Accommodation for the working-classes is, with few exceptions, good. There are 193 inhabited houses in the District. There is a sufficiency of open space about the premises, and the surroundings are healthy. Five new houses were completed during 1905.

No Common Lodging-houses are in the Handforth District.

Lighting.—The houses and streets are lighted with gas.

Water-supply.—The District is supplied by the Stockport Corporation. The water is of good quality and sufficient.

Main-drainage Needed.—A system of main sewers is still needed at Handforth, and should be provided. The present system of draining into open ditches constitutes a danger to the public health. Owing to these ditches having insufficient fall, foul matter readily accumulates in them, and after being cleaned out they soon become polluted again. The time has come when the proper drainage of Handforth should be taken in hand. The Medical Officer of Health states that it is imperative that something should be done without further delay for the efficient drainage of the District.

Dairies and Cowsheds are systematically inspected, they have been found clean, and well ventilated.

Slaughter-houses.—The two slaughter-houses in the District are regularly inspected, and kept in good order.

The Elementary School has been visited on several occasions. The sanitary arrangements are clean and satisfactory.

Nuisance Abatement.—Mr. P. Churchill Larmuth, the Surveyor and Inspector, reports that 16 nuisances came under his attention during the year. As regards 10, formal notices were served, requiring their abatement, and the remaining 6 were abated without formal notices.

New Building Bye-laws have been framed, and submitted to the Local Government Board for their approval.

HAZEL GROVE AND BRAMHALL

Urban District.

Medical Officer of Health—Dr. T. Moore.
Population at Census on April 1st, 1901—7,934.
Estimated Population in middle of 1905—9,033.
Area in acres—5,448.
Birth-rate per 1,000 living—17.0.
Death rate per 1,000 living—13.1.
Death-rate from seven principal Zymotic Diseases—0.2.
Deaths under one year to 1,000 births—83.

During the year 1901 the County Borough of Stockport obtained an Extension Order, under which 624 acres belonging to this District, having a population of 1,857, were annexed; but as this Order did not take effect till November 9th, 1901, it was convenient to consider the transferred area and population as belonging to the Urban District and the Administrative County till the close of the year 1901.

The population of the reduced area is estimated to have been 9,083 in the middle of the year 1905. It is calculated that each occupied house would average a population of 4.5 persons.

In 1905 the number of births was 155, and the number of deaths (including 5 of residents who died elsewhere) was 119. The birth-rate does not compare favorably with that of recent years. The death-rate is just below the average of recent years. Among the deaths in 1905 were 13, which are equal to 83 per 1000 births—a small proportion. Among the causes of deaths registered were, 1 small-pox, 1 diphtheria, 5 enteritis, 8 phthisis, 12 other tubercular diseases, 7 cancer, 11 bronchitis, 17 pneumonia, 3 alcoholism or cirrhosis of the liver, 1 premature birth, 2 diseases and accidents of parturition, 13 heart diseases, and 4 accidents.

Hazel Grove and Bramhall Urban District.

Cases of Infectious Disease notified.—There were 24 cases of infectious disease notified, viz. :—11 small-pox, 1 diphtheria, 11 scarlet fever, and 1 enteric fever. All the small-pox cases and 1 of the cases of scarlet fever were removed to hospital.

Action taken to Prevent Spread of Infection.—Whenever a case of infectious disease has occurred, the Inspector and his staff thoroughly disinfect everything about the house and all clothing. By order of the District Council, leaflets, giving instructions as to the best mode of procedure to prevent the spread of the disease, have been distributed. The Medical Officer of Health emphasises the very great need for close observation of these instructions. In every case of enteric fever the premises are carefully inspected, and all sanitary defects are remedied as far as possible.

In the case of small-pox, if possible, the patients are sent to hospital. Great care is taken to disinfect every "contact." All of those who will submit to it are re-vaccinated.

The "Memorandum on Small-pox and Vaccination," by the County Medical Officer of Health, a circular which is supplied by the County Council, has been distributed.

Isolation Hospital Accommodation.—The District Council have arranged with Hyde Corporation to have two beds in the Isolation Hospital reserved for the use of the District.

Infectious Disease (Prevention) Act, 1890.—This Act came in force in this District on September 6th, 1904.

Small-pox.—The notified cases of small-pox were clearly traced to have been introduced into the District from neighbouring towns. No inconvenience was found in the isolation of any of the patients, as each case was reported the patient was promptly despatched to the Hospital for small-pox belonging to the Corporation of Hyde.

Particulars of the cases are as follows :—

Hazel Grove and Bramhall Urban District.

When Notified.	Age.	Sex.	Occupation.	Vaccinated in Infancy.	Re-vaccinated.	Character of Eruption.
Jan. 16 ...	11 yrs.	F.	None ...	No	No	Confluent
,, 24 ...	50 yrs.	F.	Housewife ...	Yes	No	Discrete
,, 25 ...	30 yrs.	F.	Housewife ...	Yes	No	Discrete
,, 25 ...	31 yrs.	F.	Housewife ...	Yes	No	Discrete
,, 26 ...	5 yrs	M.	Scholar ...	No	No	Discrete
,, 28 ...	43 yrs.	F.	Housewife ...	Yes	No	Discrete
,, 29 ...	20 yrs.	M.	None ...	Yes	No	Discrete
,, 31 ...	65 yrs.	F.	Housewife ...	Yes	No	Discrete
Feb. 10 ...	26 yrs.	M.	None ...	Yes	No	Discrete
,, 18 ...	45 yrs.	M.	Collier ...	Yes	No	Discrete
May 5 ...	27 yrs.	F.	Maid servant ...	Yes	No	Discrete

Supply of Antitoxin.—The District Council have provided a supply of antitoxin for diphtheria cases.

Water-supply.—The water supplied to the District is good. It comes from the Disley Reservoirs of the Stockport Corporation.

There are, however, isolated cases where pump well-water is still in use. These wells ought to be discontinued, the growth of the District makes the risk of percolation in such wells a continually increasing risk, and this class of water is often from doubtful sources.

A well which has hitherto enjoyed a special reputation for the supply of good water, known as Kinsey's Well, was sampled for analysis during the year. The Analyst's Report was to the effect that the water was not fit for domestic use. This report was presented to the Urban Council. There is very great danger of this well being polluted from two large heaps of nightsoil within a short distance thereof.

Home Accommodation for the working classes is good and sufficient.

Hazel Grove and Bramhall Urban District.

New Bye-laws.—New Bye-laws with respect to new streets and buildings and to the subjects which come under the general purview of the Council, were approved on the 2nd Dec., 1902, and by the Local Government Board on the 2nd Jan., 1903, and are now in force throughout the District.

These Bye-laws have been favourably commented on by many authorities, and referred to as having been drawn with very great care to bring them up-to-date.

New Houses, &c.—Seventy-three plans were submitted during 1905, and of these all but one were approved. The plans were for 89 houses, 3 shops, 1 school, 2 new streets, 1 factory, and 4 miscellaneous buildings, and alterations or additions.

Ashpit-privies.—There still remain many of these pits, which should be done away with. Each receptacle should be roofed, and have a bottom at least six inches above the level of the yard adjoining. House-holders should also see that vegetable refuse, etc., are thrown behind the fire and burned, and not put into ashpits. The privies should be converted into water-closets, or if this is not practicable, into pail closets. If possible, the water-closet is preferable.

Refuse Removal. — Having this work done by the employees of the Urban District Council has effected an improvement. Much of the work now done in the night times, and accumulations of night-soil are no longer thrown into the street in the day time.

Tips have been provided in suitable places, which will satisfy requirements for some years.

During the year 2646 emptyings were done, and 2826½ loads of refuse were carted away. The annual cost, including manual labour, team labour, and rent and repair of materials was £362 8s. 4d.

Sewerage and Sewage Treatment.—There are two drainage areas, viz. :—Hazel Grove and Bramhall. In the Hazel Grove area are included Bosden, Norbury, Torkington, Offerton, and the East Ward of Bramhall. In the Bramhall area are included the South Ward of Bramhall and a portion of the North Ward. The Hazel Grove sewage is dealt with by precipitation at the Offerton Sewage Works, which are in fairly good condition. The Bramhall Drainage Area System and Outfall works were completed in 1902, and are in operation. At these Works the sewage

is dealt with bacteriologically. Practically the whole of the area is connected with the system. In some instances the private drains connected with the sewers have been overhauled and re-arranged.

Sewer Flushing.—All the sewers in the District are periodically flushed.

Nuisance Abatement.—Nuisances complained of or discovered are promptly investigated by the Inspector, and, if desirable, inspected by the Medical Officer of Health. Most nuisances are dealt with at once, the owner or tenant accepting the suggestions made. Reports are made at the monthly meetings of the Sanitary Committee, and such action is taken as may be deemed desirable. Only 4 statutory notices were served during 1905.

Unpaved Streets.—During wet weather the side streets which are unpaved get into bad condition. The paving of these should be considered by the District Council.

Lighting.—The incandescent lighting on the main road has been a great improvement. The Medical Officer of Health suggests the extension of this method of lighting.

Factory and Workshop Act.—Effect has been given to the requirements of this Act. There are at present 106 factories and workshops on the District Register. In course of inspection 2 defects were discovered. There was a nuisance on one premises, and in another the sanitary accommodation was insufficient. The nuisance has been abated, and the sanitary accommodation is being improved. There are 13 bakehouses, 51 domestic workshops, and 25 ordinary workshops.

Dairies, &c.—There are 39 persons registered as dairymen, cowkeepers or purveyors of milk, and these have been kept under continual supervision. The District Council have under consideration the making of Regulations under the Dairies, Cowsheds, and Milkshops Order.

Slaughter-houses have been inspected. There are 9 in the District.

No Common Lodging-houses are in the District.

Steam Disinfector Required.—At the present time clothing and bedding have to be sent to Hyde to be disinfected.

It would be an advantage to have a steam disinfector provided by the Council for use in this District.

Further Ground for Interments Needed.—Space in the graveyard at St. Thomas' Church, Hazel Grove, the only one in the District, generally known as Norbury Churchyard, is getting limited for burials, and some provision for the near future requires the attention of the Council.

HOLLINGWORTH

Urban District.

Medical Officer of Health —Dr. W. E. S. Burnett.
Population at Census on April 1st, 1901—2,447.
Estimated Population in middle of 1905—2,800.
Area in acres—2,086.
Birth-rate per 1,000 living—24.6.
Death-rate per 1,000 living—9.2.
Death-rate from seven principal Zymotic Diseases—0.7.
Deaths under one year to 1,000 births—130.

The population of this Urban District was 2,895 at the Census in 1891, and 2,447 at the Census in 1901. Thus during the decennium 1891-1901, there was a decrease in the population of 448*. The estimate of the population for 1903 and 1904 shows an increase, some large Bleachworks having been built in the District, and these being now in full work.

In 1905 the number of births registered in the District was 69, and the number of deaths belonging to the District was 26. The birth-rate was 0.8 lower than the average for the ten years 1895 to 1904, and the death-rate was 8.0 below the average of the same ten years.

Infant Mortality.—In 1905 only 9 infants died before completing their first year. This number is equal to 130 per 1,000 births. The proportion of deaths to each 1,000 births was 228 in 1904, owing to an epidemic of measles and whooping-cough. in the ten years 1894-1903 the infant mortality was equal to 145 per 1,000 births. The record for 1904 is therefore exceptionally low for the District.

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* This is due to the stoppage of the Cotton Factories at Waterside, where a large number of the inhabitants were employed, and to the closing of Dalton's Print Works.

Hollingworth Urban District.

Infectious Disease.—Only 5 cases of infectious disease were notified, viz.:—1 diphtheria, 1 enteric fever, and 3 erysipelas. The case of diphtheria occurred in June, and there were no sanitary defects on the premises.

The case of enteric fever occurred in March, at a house in Market Street. Obvious sanitary defects existed, and steps were taken to put the house in good order.

Preventing the Spread of Infectious Disease.—On receipt of notification of infectious disease the premises are examined, and where defects are found the owners are served with notices to remedy them. The patients are isolated, as far as possible, and their clothes and bedding disinfected by the Inspector. Such disinfectants as are required while the patients are ill are gratuitously supplied. The parents of children suffering from infectious disease are given printed papers, specifying the precautions which should be observed in each case, and are instructed to prohibit all other members of the family from attending school, and other people's children from entering the infected house, until the practitioner in attendance certifies that all risk of infection is over. Information is also given to the school-masters.

Isolation Hospital.—The Isolation Hospital, erected in 1903, was ready to receive patients in October. It is provided jointly by Hollingworth and Mottram Urban Districts, and Tintwistle Rural District. A nurse has been appointed, and a suitable ambulance has been obtained. The only patient isolated in 1904 was a man from Mottram suffering from small-pox.

Water-supply—This is obtained from the Manchester Corporation. It is of good quality and usually plentiful.

Inspection.—Periodical inspections have been made by the Medical Officer of Health and Inspector, and where defects have been notified, steps have been taken for their removal.

Common Lodging-house.—There is only one common lodging-house. This has been frequently visited, and generally found clean and in order.

Factory and Workshops Act, 1901.—There are nine factories, viz. :—Three cotton factories, one bleachworks, one gasworks, one copper engraving works, one ærated water-works, one sausage manufactory, and one cotton-waste works. With the exception of the cotton factory and bleachworks, these are of small dimensions, employing few persons. At one factory the sanitary accommodation was found to be insufficient, and at three factories

this accommodation was defective. The insufficiency and defects have now all been remedied.

There are 13 workshops in the District. All have been periodically inspected by the Medical Officer of Health and Inspector, and found in good order. They are mostly ventilated by open windows, are regularly whitewashed, the air-space is in excess of the regulations, and sanitary arrangements and drainage are satisfactory.

The bakehouses are all above ground, and kept in good order.

Dairies, etc., were visited and found in good order.

Slaughter-houses.—Most of these have been found clean, and in good order. In one instance the floor had to be re-flagged.

New Houses, etc.—Several new houses have been built, and a number of new closets have been put in.

Refuse Removal.—The emptying of ashpits, &c., has been carried out under the supervision of the Inspector.

Outfall-works are acting satisfactorily. The Mersey and Irwell Watershed Committee's Inspector has visited the works periodically, and the effluent has been classed as good.

Nuisance Abatement.—The Inspector has attended to cleansing choked drains, and getting defective drains and traps put in order. All nuisances reported or observed have been investigated, and steps taken to abate them.

The open brook course at Wednesough Green has been covered in, and the adjoining tip is to be put in order.

HOOLE

Urban District.

Medical Officer of Health—Dr. F. J. Butt.
Population at Census on April 1st, 1901—5,341.
Estimated Population in middle of 1905—5,500.
Area in acres—334.
Birth-rate per 1,000 living—26.9.
Death-rate per 1,000 living—11.6.
Death-rate from seven principal Zymotic Diseases—1.1.
Deaths under 1 year to 1,000 births—94.

Hoole Urban District.

This Urban District is only part of the Parish of Hoole; the remaining part (415 acres) forms part of the Chester Rural District.

The population of the Urban District as enumerated at the Census includes 525 in the Chester Union Workhouse, which is situated in this District.

The population of the entire District was 3,892 at the Census in 1891, and 5,341 at the Census in 1901. The increase of the population during the decennium 1891-1901 was thus 1449, that is 37.2 per cent. The estimate of the population made for the middle of the year 1905 is therefore not excessive.

In 1905 the number of births registered in the District, including 19 in the Workhouse, was 156, and the number of deaths belonging to the District was 59. The population of the Workhouse is returned as 423, thus, the population of the District, excluding the workhouse, was 5,077 in 1905. The birth-rate is about 6.3 below the average in 1895-1904, and the death-rate is about 3.5 below the average in the same ten years.

Six deaths were due to the principal zymotic diseases, viz., 2 to measles and 4 to diarrhœa. There was also 1 death from influenza and 1 from enteritis. There were 9 deaths from phthisis, 2 from cancer, 6 from pneumonia, 3 from heart disease, and 2 from premature birth.

Cases of Infectious Disease notified.—There were 10 cases of infectious disease notified, viz.:—1 diphtheria, 5 scarlet fever, and 4 erysipelas. The 5 cases of scarlet fever, and one of the cases of erysipelas belonged to Hoole Urban District. The case of diphtheria and 3 of the cases of erysipelas belonged to the Workhouse. Four cases of scarlet fever, 1 case of diphtheria and 2 of erysipelas were removed to the Isolation Hospital.

Isolation Hospital Accommodation.—This is provided at the Chester Corporation Hospital at Sealand.

Phthisis.—Nine deaths from phthisis in a population of 5,077 is equal to 1.77 per 1,000 living, a very high phthisis death-rate. The Medical Officer of Health again emphasises the extreme importance of giving every possible encouragement to the voluntary notification of phthisis in the District, and of arranging for the disinfection of premises after a death from this disease.

Water-supply.—Water is supplied to the District from the Chester Waterworks, except at Piper's Ash, where it is

obtained from two wells, which were cleaned out by the owners in the latter half of 1900.

Milk-houses.—The 12 milk-houses in the District have been periodically inspected, and were found in good sanitary condition.

Inspection.—The District has been carefully inspected by the Medical Officer of Health and the Inspector.

New Houses.—There were 57 new houses erected during 1905, but by far the larger proportion were not occupied till the last quarter.

Recreation Ground.—The necessity of providing an open space, as a recreation ground, having arisen, through the rapid increase of the population in the district, a piece of land $6\frac{1}{4}$ acres in extent, was acquired in 1902, and has now been laid out. It was opened on May 7th, 1904, and has been much in use by children and others residing in the District.

The Factory and Workshop Act.—The only premises which have had to be inspected are 2 Bakehouses, which are in a clean and thoroughly satisfactory condition.

No Slaughter-houses exist in the District, the butchers supplying meat neither killed nor dressed in the District.

Sewers.—The sewers are in good order and kept regularly flushed. These sewers are connected with the sewerage system of the City of Chester, and the sewage is dealt with at the Chester Outfall Works.

Nuisance Abatement is attended to by the Inspector, who reports that all the Notices served by him for nuisances (complained of or discovered) were complied with.

Refuse Removal.—All ash-pits are regularly emptied once a week, by men in the employ of the District Council. There are now no privies in the District except on the outskirts. where there are no water mains.

HOYLAKE AND WEST KIRBY

Urban District.

Medical Officer of Health —Dr. G. A. Kenyon.
Population at Census on April 1st, 1901—10,911.
Estimated Population in middle of 1905—12,657.
Area in acres—2,066.
Birth-rate per 1,000 living—21.8.
Death-rate per 1,000 living—11.8.
Death-rate from seven principal Zymotic Diseases—0.8.
Deaths under one year to 1,000 births—83.

The Urban District consists of West Kirby, Little Meols (including Hoylake and Hilbre Island*) Hoose, Great Meols and part of Grange. The area is as follows:—

	Area in Acres.
West Kirby...	482
Little Meols	711
Hoose	108
Great Meols	695
Part of Grange	23

The Urban District was created by an Order of the Cheshire County Council, which was confirmed by the Local Government Board, dated January 15th, 1891.

The portion of the Urban District now regarded as Hoylake is Meols, Hoose, and Great Meols; the portion now regarded as West Kirby is West Kirby and part of Grange.

The population of the Urban District was 6,545 at the Census in 1891, and 10,911 at the Census in 1901. The increase in the population during the decennium 1891-1901, was thus 4,366, that is 66.7 per cent. The estimate of the population made for the middle of the year 1905, is 12,657. This is based on the assumption that the population has continued to increase at the same rate since the Census of 1901 as during the previous ten years. The estimate is in accord with the rate at which the building of new houses is proceeding.

In 1905, the number of births registered in the District was 276, and the number of deaths registered in the District was 151. From these deaths should be deducted 18 deaths of

* This Island appears on the Ordnance Map as a detached part of the former civil parish of St. Oswald, now incorporated with that of Chester, but it is treated as a part of Little Meols owing to its having been rated to this parish for the maintenance of the Poor.

persons not belonging to the District, and to these should be added the deaths of 16 persons belonging to the District which took place elsewhere. Thus the deaths of those belonging to the District were 149. The birth-rate is 0.1 below the corresponding average in 1895-1904, and the death-rate is 1.4 below the corresponding average in 1895-1904.

Of those who died, 23 were infants under a year old, and 42 were persons 65 years old and upwards.

Ten deaths were ascribed to the principal zymotic diseases, viz.:—1 measles, 2 scarlet fever, 3 whooping-cough, 1 enteric fever, and 3 diarrhœa. There were also 4 deaths due to epidemic influenza, 15 to phthisis, 4 to other tubercular diseases, 6 to cancer, 8 to bronchitis, 15 to pneumonia, 3 to alcoholism, or cirrhosis of the liver, 3 to premature birth, 12 to heart diseases, 2 to accidents, and 1 to suicide. There was 1 death from peripheral neuritis.

Infectious Disease.—There were 97 cases of infectious disease notified, viz.:—1 small-pox, 7 diphtheria, 2 erysipelas, 78 scarlet fever, and 9 enteric fever. The case of small-pox, 4 cases of diphtheria, 62 cases of scarlet fever, and 5 cases of enteric fever, were isolated in Hospital—that is 74.2 per cent. of the notified cases. The prompt removal of these cases to Hospital, and the careful isolation at home of others, prevented any general spread of infectious disease. All cases were duly investigated. Measures were taken for the discovery and correction of insanitary conditions and for disinfection.

Small-pox.—The person who suffered from this disease had recently arrived from Spain.

Scarlet Fever.—This disease was prevalent in Liverpool and Birkenhead in 1905, and with the free inter-communication that there must be between the District and these towns, there was doubtless fresh introduction of infection. In several instances, infection was traced. In connection with the cases of scarlet fever, there were 127 rooms disinfected, and 41 lots of clothing and bedding dealt with at the Steam Disinfector. Three lots of bedding, etc., were destroyed.

Enteric Fever.—In the houses where the cases occurred the drains were disinfected. As regards the 4 cases treated at home, pails for receiving the excreta were supplied, collected and dealt with daily.

Hoylake and West Kirby Urban District.

Phthisis.—The 15 deaths from phthisis are equal to 1.18 per 1,000 living—a high rate.

Disinfection after Phthisis.—The Medical Officer of Health having reported in favour of notifying phthisis as an infectious disease in January, 1902, the District Council have since undertaken the disinfection of premises infected owing to phthisis, upon the request of medical attendants. Disinfection of rooms, bedding, etc., was thus carried out, free of cost to the occupiers, on six occasions in 1903, on five occasions in 1904, and on five occasions in 1905.

Water-supply.—The District has an excellent supply of water from West Kirby Waterworks (deep wells).

Inspection.—The Medical Officer of Health has visited the District a number of times, made general and special inspections, and advised the District Council and the Surveyor and Inspector on various points in connection therewith.

Sewerage and Outfall Works.—The District is well sewered, and the sewers are extended from time to time, as required, for the drainage of streets and buildings. The sewers are periodically flushed every fortnight, and are in good working order. With few exceptions all the houses have water-closets.

The sewers in Grosvenor Road, and Devonshire Road, Kirby Park, West Kirby, have been relaid, provided with man holes, etc., at a cost of £100. They were blocked with roots. A new sewer is now being laid along Park Road, Meols, to accommodate new property there at a cost of £550.

The new sewer Outfall Works are in order. The sewer outfall at Sandy Lane (which was not long since reconstructed and enlarged at a cost of about £12,000), is reported to be working well.

All the sewers in the District are inspected and flushed periodically. Some are flushed weekly, others fortnightly.

New Drains Tested.—All new drains are carefully inspected and tested before being covered.

Scavenging.—The District Council undertake the scavenging of the District with their own staff of men and

their own carts and horses. New stables and a depôt have lately been provided for them. The removal of "trade refuse" is made daily or otherwise, at a uniform charge. As regards street-scavenging, additional men are employed now, and street orderly boys were added to the scavenging staff in 1903. The dust bins are emptied every week, and the ash-pits every two or three weeks.

Private Street Works Act.—During 1905 the following streets were made up and completed under this Act:—At West Kirby: Milton Road, Kingston Road, Norton Road, Townfield Road, Grove Road, Murray Grove, Hilton Grove, Ridley Grove, and Acacia Grove; Bank Avenue and King's Avenue, Meols; and Avenue Road, Hoylake. Eighteen passages have been paved and completed. Over 50 passages and 8 streets have been taken in hand, and are in various stages of progress.

Mr. Tom Robinson, as Inspector of Nuisances, and Inspector under the Factory and Workshop Act, has made a very complete and satisfactory report of the work done in these departments.

Factory and Workshop Act, 1901.—The factories and workshops have been duly inspected. At the close of 1904 there were 92 on the Register, of which 27 were bakehouses, 4 laundries, 11 dressmakers and milliners, 5 tailors, 5 shoemakers, 24 blacksmiths, 2 wheelwrights, 6 printers, 2 golf-ball and club makers, and 6 others. There were 121 inspections made, and 12 were found defective, viz.:—In 3 there was overcrowding, in 3 insufficient drainage of floors, in 2 the sanitary accommodation was insufficient, and in one the ventilation was unsatisfactory. Notices were served, and in accordance therewith, the defects were remedied in every case.

Abatement of Nuisances.—There were 248 nuisances of various kinds dealt with during the year. Fourteen of these were due to defective ashpits, 31 to defective drains, 5 to defective gutters and rain spouts, 27 to defective water-closets, and 7 to defective soil pipes and ventilators. There were 16 offensive privies converted into water-closets, and 14 ashpits were done away with, being replaced by galvanized iron receptacles. In 19 instances blocked drains were put in order. In 5 instances accumulations of manure were removed, 14 undrained houses were drained, 62 insanitary yards were made good, 8 animals so kept as to be a nuisance were dealt with, 7 dirty houses were whitewashed, 1 house

unfit for human habitation was demolished, 1 smoke nuisance was dealt with, and 1 nuisance due to overcrowding. All the defects reported have been remedied with the exception of a few, which came under notice towards the end of the year, and are still outstanding. All the houses in Fornal's Green, Meols, have now been properly drained and connected with the sewer.

There is a nuisance just outside the District, arising from want of sewerage, to the houses in Heron Road, which is being dealt with and remedied by the construction of a sewer connecting with the Fornal's Green Lane sewer, by arrangement with the Rural District Council.

The Recreation Ground, which a short time since was laid out for football, cricket, etc., is in regular use. The pavilion, which was built at a cost of £130, provides dressing-rooms and sanitary conveniences.

Dairies and Cowsheds.—There are 15 registered cow-keepers and dairy men, as well as 13 other purveyors of milk. The premises have been inspected twice during the year, and in some cases more frequently. During the year 7 notices were served, and all were complied with.

Slaughter-houses.—There are 4 slaughter-houses in the District, all of which have been systematically inspected. The Bye-laws have been observed.

Isolation Hospital Accommodation.—The District is contributory to the Wirral Joint Hospital Board, having thus excellent accommodation for the isolation of cases of infectious disease.

Marine Lake, New Parades, &c.—Among the many advantages of this District are the extensive parades constructed along the shore both at Hoylake and West Kirby, the Marine Lake, and the lighting of the District with electricity. All these improvements tend to make the most of the District's great natural attractions.

Meteorological Reports, for 1905, are furnished by Mr. Tom Robinson, Asso. San. Int. The station where the observations were taken is at Hoylake, the height above the sea level being 33.7 feet.

Hoylake and West Kirby Urban District.

1905.	Mean Barometer (inches) at 32° F. (inches).	Mean Temperature (degrees).	Total Bright Sunshine h. m.	Total Rainfall (inches).
January ...	30.212	40.6	47 55	1.28
February ...	30.136	42.3	82 31	1.04
March ...	29.640	45.1	141 33	2.81
April ...	29.833	45.7	99 30	1.87
May ...	30.146	51.9	225 35	0.43
June ...	29.983	58.7	228 36	2.00
July ...	30.056	62.3	248 36	1.73
August ...	29.838	58.8	165 42	3.01
September ...	29.974	55.2	108 54	1.30
October ..	30.066	46.6	105 24	2.26
November ...	29.659	42.6	60 24	3.63
December ...	30.160	43.3	69 12	0.60
	29.975	49.4	1583 52	21.96

The mean barometer for the seven years, 1899-1905, was 29.935 inches.

The mean temperature for the seven years, 1899-1905, was 55.0 degrees.

The total bright sunshine average for the seven years, 1899-1905, was 1,583 hours 52 min.

The yearly total rainfall average for the seven years, 1899-1905, was 26.73 inches.

KNUTSFORD

Urban District.

Medical Officer of Health—Dr. T. W. H. Garstang.
Population at Census on April, 1901—5,172.
Estimated Population in middle of 1905—5,753.
Area in acres—1,760.
Birth-rate per 1,000 living—23.8.
Death-rate per 1,000 living—13.5.
Death-rate from seven principal Zymotic Diseases—0.8.
Deaths under one year to 1,000 births—103.

By Local Government Board Order, which came into operation on April 1st, 1895, the Civil Parish of Knutsford was constituted an Urban District.

The population of this Urban District was 5,172 at the Census in 1901, and the populstion of the corresponding area was 4,643 at the Census in 1891. The increase of the population during the decennium 1891—1901 was thus 529, that is 11·4 per cent. The estimate of the population made for the middle of 1905 is 5,755. From this should be deducted the inmates of the Gaol (528) and Workhouse (360), leaving 4,867. This number, plus 17 officers resident in the Workhouse, and 16 paupers belonging to Knutsford, gives a corrected population of 4,900, on which birth-rates and death-rates are calculated.

During 1905, the number of births registered was 117, excluding 11 births which occurred in the Workhouse, and the number of deaths registered was 66, after excluding those which took place in the Workhouse or Gaol, and those of non-residents. Deaths of persons in Knutsford not belonging to the District have been respectively notified to the Medical Officers of Health of such Districts. The birth-rate in 1905 is about 4 below the average in Knutsford for the ten years, 1895—1904, and the death-rate in 1905 is about 2.6 below the average in the same 10 years.

Infant Mortality.—Twelve of those who died were infants under a year old. This number is equal to 103 per 1,000 births. During 1895—1904 there were 136 deaths of infants to each 1000 births. In 1905 the causes of the deaths of infants were registered as due to diarrhœa (2), enteritis (1), gastritis (1), premature birth (4), atrophy (1), convulsions (2), and bronchitis (1). The twelve deaths were all duly certified.

Illegitimate Infants.—Among the 117 infants born in the District, or belonging thereto, 7 were illegitimate. This number is equal to 6 per-cent., the same as in 1904. None of

these children died. The per-centage of illegitimate children who died in 1905 was 10.2.

Coroner's Inquests.—The cause of 8 deaths was made the subject of official inquiry. According to the finding of the Coroner's Jury these deaths were due to :—

Male, 36 years. Fall from bicycle.
Female, 74 years. Heart disease and shock from burns.
Female, 81 years. Cerebral effusion from fall.
Female, 76 years. Bronchitis following broken ribs due to fall.
Male, 49 years. Suicide whilst temporarily insane.
Male, age unknown. Found dead in a Brook.
Female, 4 years. Accidently drowned in a washing-tub.
Female, 1 month. Convulsions.

Cases of Infectious Disease Notified.—Fourteen cases of infectious disease were notified during the year, viz. :—4 diphtheria, 2 scarlet fever, 2 enteric fever, 2 puerperal fever, and 4 erysipelas. None of these cases occurred in the Workhouse or Gaol. One case of diphtheria and 1 case of scarlet fever were sent to the Isolation Hospital.

Deaths from Zymotic Diseases.—There were 3 deaths from the principal zymotic diseases, viz. :—3 whooping-cough and 1 diarrhœa. The zymotic death-rate was thus equal to 0.8 per 1000 living, which is 0.4 below the 10 years' average.

Vaccination.—The Urban District forms, by population, nearly two-thirds of the Knutsford Registration Sub-District of Bucklow Union. For this combined area the vaccination returns for 9 years 1896-1904 are given in full in the Report for Bucklow Rural District. From this it appears that in 1904 there were 198 children vaccinated out of 203 surviving (one was insusceptible, 1 was postponed, 1 was lost sight of, and 2 had certificates of exemption), so that just under 98 per cent. were vaccinated, showing that the good record in the locality was maintained.

Diphtheria.—Two of the cases, possibly three, were open to doubt, judging by their after history. No bacteriological confirmation was sought. The fourth case, which occurred in November, was taken to Hospital.

Whooping-cough was prevalent to some extent in the first quarter of the year, but the number of cases is not known.

Enteric Fever.—One case occurred in August, and was bacteriologically confirmed. Another case, quite distinct, occurred in October. Both cases were infected outside the District.

Diarrhœa.—The only fatal case occurred in June.

Puerperal Fever.—A fatal case occurred in June, and a non-fatal case in December, the latter in the practise of a Midwife.

Phthisis.—The three patients who died from this disease, all females, were aged respectively 17 years, 38 years and 48 years. The number is equal to 0.6 per 1,000 living. In the last seven years 23 persons belonging to Knutsford have died from phthisis. As medical practitioners will not notify cases during life, the Sanitary Authority has no opportunity of taking steps to reduce the death-rate.

Cancer.—Two men and 3 women died from this disease, their ages being respectively 48 years, 58 years, 62 years, 67 years and 68 years. In the last 7 years, 25 persons belonging to Knutsford have died from this disease.

Isolation Hospital Accommodation is provided by the Bucklow Joint Hospital Board. Since December 8th, 1902, the new Hospital at Baguley has been available. About the same time, the temporary Hospital owned by the Bucklow Rural District Council was sold to the Bucklow Joint Hospital Board, and has been since removed to Baguley and re-erected as a temporary Small-pox Hospital. The District is therefore fully equipped.

Disinfection by Steam.—This can now be obtained by sending the infected bedding, clothing, etc., to Manchester, in a van belonging to the Joint Hospital Board. The expense is, however, considerable, and the plan has not yet been tried in this District.

Systematic Inspection.—The District is so small, and so intimately known to the Medical Officer of Health and Inspector, that it is exceptionally well inspected. The Medical Officer of Health makes upwards of 50 visits yearly for the inspection of the District.

Water-supply.—In the Report for 1902 the following passage occurs:—"At last the boring at Booth Mill has been abandoned. A depth of nearly 2,000 feet was reached, without satisfactory results. The water-supply, therefore, remains as before, taken from a stream admitted on all hands to be polluted,

but so far not showing any obvious results to the detriment of the public health."

No steps to obtain a good water-supply were taken in 1903, 1904 or 1905.

The supply remains ample in quantity, and, although the water does not yield the best possible results on chemical analysis, it stands the test of experience, for no actual illness has ever been attributed to its use.

Sewage Works.—The analyses of the effluent by the Mersey and Irwell Joint Committee have been favourable throughout the year. The new filter-beds are progressing well, and will be able to be brought into use during the spring.

Peat Pail System.—Twenty-eight privies have been converted into peat-pails, and four new cottages have been built with peat-pails, thus bringing the number in use up to about 163. They are giving every satisfaction.

Refuse Removal, &c.—The system of "contracting" for this work was, during 1903, replaced by the creation of an official scavenging department under the Council. The Inspector is of opinion that increased efficiency is already observable, and that it will be found, on further experience, that economy also has been secured.

Inspector's Report.—The Inspector reports that defective drainage in 6 houses has been remedied during the year. He has inspected the Dairies and Cowsheds in the District, and all appeared in satisfactory condition, except two, where improvements were required. He inspected also the slaughter-houses.

Factories and Workshops.—There are 103 Workshops entered in the Register. They are for the most part small and insignificant. Though they have been frequently visited, no defects have been detected, except that one shop was overcrowded, and this was promptly dealt with. There are no underground bakehouses.

School Accommodation.—The Infant School in Silk-mill Street is being enlarged by Earl Egerton of Tatton.

Building Operation.—Plans for 23 cottages have been passed during the year, and also for 4 large houses and 2 shops.

Recreation Grounds.—The District has always been extremely fortunate in the possession of the large open space (about 50 acres), known as The Heath. In addition to this, the Council has now acquired, by negotiation with Earl Egerton of Tatton, the southern end of "The Moor" (about 5 acres), lying between the old town and the railway enbankment. This has been levelled, and fenced. Trees and shrubs have been presented and planted. In the water-logged area, excavation of one part, and consolidation of another, will, it is hoped, result in the whole becoming definitely either "land" or "water." A contribution from the Freeholders' Fund will minimise the actual expenditure out of rates.

The scheme, when completed, will be one of the greatest æsthetic improvements the District has ever known; and will be found of value from a sanitary point of view also.

The recreation ground was, at the close of 1905, practically completed, and will shortly be under the regulation of proper Bye-Laws.

Dangerous Foot-path.—An iron fence has been erected on the Bank, in Crosstown. This is a useful protection, especially in the case of children.

Cemetery.—The completion of the Cemetery was noticed in the Annual Report for 1901. The site is an excellent one, on Tabley Hill, about a mile from the town. The grave-spaces number about 4,100. At the end of 1905 there had been 257 interments.

LYMM.

Urban District.

Medical Officer of Health, to September 30th—Dr. D. C. M. Lunt.
Medical Officer of Health, after September 30th—Dr. E. M. De Jong.
Population at Census on April 1st, 1901—4,707.
Estimated Population in middle of 1905—4,900.
Area in acres—4,372.
Birth rate per 1000 living—22.2.
Death-rate per 1000 living—12.8.
Death-rate from seven principal Zymotic Diseases—0.8.
Death under one year to 1000 births—64.

Lymm Urban District.

The Annual Report for 1905 was prepared jointly by Dr. Lunt, who was Medical Officer of Health till the end of September, and by Dr. de Jong, who succeeded him as Medical Officer of Health on October 1st.

The population of this Urban District was 4,995 at the Census in 1891, and 4,707 at the Census in 1901. The decrease in the population during the decennium 1891-1901 was thus 288, that is 5.76 per cent. The estimate of the population, made for the middle of the year 1904, assumes that the population has increased by 193 since the Census.

The Urban District consists of a residential village, with agricultural surroundings. The village itself, somewhat hilly, is surrounded by flat, low-lying plain land on all sides. The population consists mainly of a residential portion, in business either at Warrington or Manchester, of local operatives (fustian cutters), of operatives living in the District and working outside it, and finally of an agricultural portion.

The house accommodation throughout the District is adequate, and in all cases fit for habitation. The open space around the houses is ample, and the surroundings of the dwellings are clean.

During 1905 the number of births registered in Lymm was 109, and the number of deaths registered in Lymm (including 8 deaths of residents who died elsewhere) was 63. The birth-rate is about 0.6 below the average birth-rate in Lymm in 1895-1904, and the death-rate is about 0.6 below the Lymm average in the same 10 years.

There were 4 deaths from the principal zymotic diseases, namely, 1 scarlet fever, 1 diphtheria, and 2 diarrhœa. There were also 4 deaths from epidemic influenza. Among the registered causes of death were 4 from phthisis, 4 from other tubercular diseases, 8 from cancer, 5 from bronchitis or pneumonia, 3 from alcoholism or cirrhosis of the liver, 2 from premature birth, 5 from heart diseases, and 4 from accidents.

Only 7 of those who died were infants under a year old, and 28 were persons 65 years old and upwards. This is an exceptionally good record.

Cases of Infectious Disease Notified.—There were 29 cases of infectious disease notified in 1905, viz. :—12 diphtheria, 6 scarlet fever, 6 erysipelas, and 5 measles. Seven of the cases of diphtheria were isolated in Hospital.

Measles was made a notifiable disease in 1900, and chicken-pox was made a notifiable disease in 1902.

Lymm Urban District.

Diphtheria.—Seven of the cases were notified in the same week. Six of these were girls attending the same school, and 1 gave it to her brother. The school premises were examined, and it was found that a drain in the play ground was directly connected with the sewer. This drain was promptly trapped, and some other defects discovered were remedied. The nose and throat of every child in school, and of each absentee were examined on two occasions, with the result that 4 new cases were detected, and sent to Hospital. The remaining cases occurred 5 months later, in members of 1 family.

Antitoxin Supplied.—The Medical Officer of Health has been directed by the District Council always to have in hand a supply of diphtheria antitoxin, to be at the command of medical practitioners belonging to the District in an emergency.

Bacteriological Diagnosis.—The District Council have adopted the suggestion of the Medical Officer of Health in his Annual Report for 1902, and made arrangements with the Pathological Department of the Victoria University of Manchester, for the examination of the blood in suspected cases of typhoid fever, and for the examination of morbid products from the throat in suspected cases of diphtheria. The arrangements made will doubtless be of much use to medical practitioners, and to the Authority.

Disinfection.—This is done by spraying with formalin. Time is thus saved, and after the initial cost of the apparatus the new method of disinfecting is cheaper than fumigating with sulphur. Satisfactory arrangements have been made with the Warrington Authority for the disinfection by steam of articles which cannot be efficiently dealt with by boiling or formalin.

Isolation Hospital Accommodation. — The new Isolation Hospital which was finished at the close of 1904 was furnished, and ready for use early in 1905. It was thus available for the isolation of the cases of diphtheria referred to above. It is inspected from time to time, and kept ready for immediate occupation, on the shortest notice.

No Ambulance.—There is as yet no means of conveying infectious patients from their homes to hospital, so an ambulance should be provided.

No Small-pox Hospital has yet been provided.

Water-supply.— The town's water, which is supplied by a company, has been from time to time examined by the Medical

Officer of Health and by an independent analyst. The results show that it is a pure potable water. There are several sources of water-supply, which are not above suspicion. It is to be regretted that several cottages are dependent upon surface wells, when good town's water could be laid on.

New Houses.—There were 28 new houses erected in 1905. These were nearly all villa residences.

Inspector's Report.—Mr. Mort, the Inspector, to whose energy and ability Dr. Lunt has often testified, reports that in 43 instances house-drains have been put in order. Twenty privies have been altered or re-constructed, and an old well in Pepper Street closed.

Refuse Removal from the ashpits and from privy-middens is effected by public scavengers at intervals of from one to two months, according to the size of the pit. In 1905 the number of emptyings was 4453, and the number of loads of refuse removed was 1462. Dry ashes are carted to a tip, and the night-soil is used by farmers. The Inspector supervises the removal of refuse.

Sewer Flushing.—The sewers have been flushed with town's water every fortnight during the past six years. In consequence of this, no complaints of ill odours in the public thoroughfares have been received.

Outfall Ground.—This is kept under supervision, and continues to act well. Samples of effluent analysed by the Mersey and Irwell Joint Committee have been reported on as "good."

No Common Lodging-houses are in the District.

Dairies, &c. (there are 16), are inspected periodically. They all have good water-supplies.

One sample of milk was submitted for examination, and this was found to be tuberculous. The Medical Officer of Health suggests that more samples should be tested.

Factory and Workshop Act.—There are 16 factories, 45 workshops, and 3 workplaces in the District. One hundred and ninety-five visits of inspection have been paid. The cleanliness was found satisfactory, the ventilation adequate, and the air space above the requirements. The provision of sanitary conveniences was found ample. There are no home workers in the District. The sanitary condition of all bakehouses (12) was found good.

Slaughter-houses.—The 3 slaughter-houses in use in the District are registered. All are clean and well kept.

Offensive Trades.—There is a brick-yard and also a bone works in the District. They are near together, and situated in a sparsely populated part. They are inspected, and cause no nuisance.

Canal Boats.—Inspector Mort visited 72 boats in 1905. In 2 instances no certificate could be produced, and in 4 instances the certificates did not identify the owner with the boat. The owners were accordingly communicated with.

MARPLE

Urban District.

Medical Officer of Health—Dr. H. Burton.
Population at Census on April 1st, 1901—5,595.
Estimated Population in middle of 1905—5,700.
Area in acres—3,054.
Birth-rate per 1,000 living—18.6.
Death-rate per 1,000 living—13.6.
Death-rate from seven principal Zymotic Diseases—0.5.
Deaths under one year to 1,000 births—151.

This Urban District takes in Barnes Fold, Hawk Green, Middlewood, and Windlehurst.

The population of the entire District was 4,844 at the Census in 1891, and 5,595 at the Census in 1901. The increase in the population during the decennium 1891-1901 was thus 751, that is 15.5 per cent. The estimate of the population made for the middle of the year 1905, is only 105 in excess of the Census population. This estimate is so low owing to the completion of the Midland Railway Tunnel running through part of the District, and the departure of workmen lodged in railway huts since closed.

Marple lies on a subsoil of clay, with occasional deposits of sand and gravel.

In 1905, the number of births registered was 106, and the number of deaths registered (including the deaths of 3 persons belonging to Marple, who died in Public Institutions elsewhere) was 78. The birth-rate is about 2.2 below the

average in Marple in 1898-1904, and the death-rate is about 0.5 above the average in Marple in 1898-1904.

There were 3 deaths from the principal zymotic diseases, viz.:—2 measles, and 1 diphtheria. There was also a death from influenza. There were 2 deaths from phthisis, 3 from other tubercular diseases, 7 from cancer, 8 from bronchitis, 5 from pneumonia, 2 from premature birth, and 6 from heart diseases.

Cases of Infectious Disease notified.—There were 31 cases of infectious disease notified, viz.:—3 diphtheria, 24 scarlet fever, 2 enteric fever, and 2 erysipelas.

Scarlet Fever.—The 24 cases which occurred were all of a mild type. The difficulty in stamping out the disease was chiefly due to the carelessness of parents in not calling in medical aid till their children were desquamating.

Cancer.—The 7 deaths certified as due to cancer in 1905 are equal to 1.2 per 1,000 living.

Water-supply.—This is obtained in bulk from the Stockport Corporation filters at High Lane, and is daily pumped into the service reservoir at Wybersley. It has been satisfactory as regards quality, but the drought caused a shortage of supply between June 26th and September 4th. The amount consumed during the year was 17,818,143 gallons. This is inclusive of the amount used for flushing the mains and main sewers.

New Houses.—Twenty-nine new houses have been tenanted during the year. Thirty houses are in course of construction, or not yet tenanted.

The whole number of houses in the District is 1,458, and of these 1,422 are inhabited. There is thus a small fraction over 4 persons to each inhabited house.

Dairies, &c.—Regulations under the Dairies, Cowsheds and Milkshops Order were made towards the end of 1897, and came into force on December 1st. Much has been done to remedy defects since then. The Inspector visits the premises and endeavours to get the regulations complied with. During 1905, any suggestions for improvement of premises made to the occupier were complied with.

Slaughter-houses.—There are 5 in the District. They have been kept clean, but they are all situated in objectionable places, and are unlicensed.

Factories and Workshops.—The number of factories and workshops using steam power is 7, there is a corn mill worked by water-power, and there are 37 workshops, employing hand labour. The Medical Officer of Health and Inspector have systematically visited all these. Generally, they were found in satisfactory condition. Notices were served on the owners of 5 premises where defects were observed. In one instance a prosecution was undertaken. All the defects were remedied. There are 8 bakehouses in the District, all being in a satisfactory condition.

Sewer-flushing was interfered with owing to the shortage of water. However, the main sewers were flushed from time to time.

Outfall Works.—The treatment of the sewage at Dooley Lone has been carried on satisfactorily. During the year 5 samples of effluent were taken by the Mersey and Irwell Inspector. After analysis, 4 were reported "good," and 1 was reported "fair."

Refuse Removal has not been well-done during 1905. The work is done under contract. This has been considered by the Sanitary Committee, and no doubt a recommendation will shortly be made in favour of the work being done by the Authority's men and appliances, without the intervention of a contractor, except for the supply of teams and team-labour. It is getting more difficult every year to find land on which refuse may be tipped, without creating a nuisance. The only alternative way of disposing of the refuse will be to provide a destructor to burn it.

The cost of refuse removal in 1905 was £450 2s. 2d.

Canal Boats.—The canal boats have been inspected by Mr. Hague. He reports that they are kept clean and in good sanitary condition. The number of boats on the register is 84, two new boats having been registered during 1905. In three instances the boats inspected did not comply with requirements. Notices were served on the owners and the defects were remedied. There has been no case of infectious disease on board a boat, and no overcrowding.

Recommendations.—The Medical Officer of Health points out the need of an apparatus for disinfecting bedding etc. He also thinks that measles and phthisis should be notified to the Authority.

Rainfall.—The monthly rainfall recorded in Marple in 1905 was as follows :—

January ...	19 days	...	2.21 inches.
February ...	19 ,,	...	1.88 ,,
March ...	23 ,,	...	4.05 ,,
April ...	19 ,,	...	2.49 ,,
May ...	8 ,,	...	0.94 ,,
June ...	11 ,,	...	2.49 ,,
July ...	11 ,,	...	1.74 ,,
August ...	22 ,,	...	3.99 ,,
September	18 ,,	...	2.18 ,,
October ...	15 ,,	...	2.75 ,,
November	18 ,,	...	2.89 ,,
December	13 ,,	...	0.62 ,,
Total in year	196 ,,	...	28.23 ,,

Average days, 46 years—184 days.

Average fall, 54 years—31.63 inches.

Temperature.—The mean average temperature recorded in Marple in 1905, was 46.8 degrees F.

MIDDLEWICH

Urban District.

Medical Officer of Health—Dr. T. W. H. Garstang.
Population at Census, April 1st, 1901—4,669.
Estimated Population in middle of 1905—4,850.
Area in acres—1,082.
Birth-rate per 1,000 living—34.4.
Death-rate per 1,000 living—16.1.
Death-rate from seven principal Zymotic Diseases—3.05.
Deaths under one year to 1,000 births—120.

By a Local Government Board Order, which came into operation on April 15th, 1893, the Middlewich Urban District was extended to include parts of the Civil Parishes of Byley, Newton, and Kinder-cum-Hulme, which were added to Middlewich Civil Parish on September 30th, 1894.

The population of the Urban District was 4,669 at the Census in 1901, and the population of the corresponding area was 3,970 at the Census in 1891. The increase of population during the decennium 1891-1901 was thus 699, that is 17.6 per

cent. The estimate of the population made for the middle of 1904 is based partly on the assumption that the population has continued to increase much at the same rate, partly on actual knowledge as to the state of trade, and partly on unoccupied property, new houses built, &c.

In 1905 the number of births registered was 167, and the number of deaths registered was 77. Of the deaths 3 should be deducted, as not belonging to the District, and 4 should be added, being the deaths of residents in the Albert Infirmary, Winsford; the Workhouse, and the Isolation Hospital. The number of deaths of persons belonging to the District was therefore 78. The Middlewich birth-rate in 1905 is 2.3 below the average in 1895-1904. The Middlewich death-rate in 1905 was 1.6 below the average in the same 10 years.

Illegitimate Infants.—Eleven of those born were illegitimate, that is 6.6 per cent. Three illegitimate infants died, that is 27 per cent. Of the legitimate infants 17 died, that is 11 per cent.

Uncertified Deaths.—Two occurred in September, one being an infant three months old, who died from convulsions, and the other a woman 76 years old, who died from syncope.

Coroner's Inquests.—Inquests were held on the bodies of six persons who died. One was a Nantwich child drowned in the Canal. The others were a male infant six months old, who died on March 6th from convulsions due to improper feeding, a female infant 7 months old, who was knocked down by a cyclist, and died on May 14th, a woman 20 years old, who committed suicide on July 11th, when temporarily insane, a man 45 years old, whose death was due to the accidental administration of a dose of opium on September 26th, a man 73 years old, accidentally drowned on December 3rd, and a man 23 years old, who died of shock from scalds.

Infant Mortality.—Twenty of those who died were under one year of age, a number which is equal to a 120 per 1,000 births. In 1896–1905 out of each 1,000 infants born, 163 died under one year of age. The causes of deaths of infants in 1905, were as follows:—Diarrhoea (3), gastritis (1), premature birth (3), congenital defects (2), erysipelas (1), meningitis (not tuberculous) (2), convulsions (5), bronchitis (1), pneumonia (1), and other causes 1.

Infectious Disease notified.—Sixty-one cases of infectious disease were notified in 1905, viz.:—39 diphtheria, scarlet

fever 10, enteric fever 1, puerperal fever 1, and erysipelas 10. Of these cases nine were removed to the Isolation Hospital, viz. :— diphtheria 7, and scarlet fever 2.

Zymotic Mortality.—There were 17 deaths from the principal zymotic diseases, viz. :—measles 1, whooping-cough 1, diphtheria or membranous croup 11, and diarrhœa 4. In 1904 there were 21 deaths from the principal zymotic diseases. The average annual number of deaths from these diseases in the 10 years immediately preceding is 10. There were also 2 fatal cases of epidemic influenza.

Vaccination.—With the assistance of the Vaccination Officer, the Medical Officer of Health is able to give the figures for the Middlewich Sub-District of the Northwich Union (of which the town of Middlewich forms about two-thirds) for a period of nine years.

Year.	Number of Births Registered.	Successfully Vaccinated.	Insusceptible.	Had Small-pox.	Dead Unvaccinated.	Postponed on Medical Certificate.	Removed, and Traced.	Removed, and Lost.	Conscientious Objections.	Unaccounted for.
1896	269	242	—	—	21	3	—	3	—	—
1897	267	234	1	—	23	2	1	3	3	—
1898	240	204	1	—	21	4	1	4	4	1
1899	219	184	3	—	23	1	1	3	1	3
1900	250	210	1	—	26	—	1	5	3	4
1901	225	195	2	—	22	—	2	—	3	1
1902	256	227	—	—	23	2	1	1	1	1
1903	246	211	—	—	23	1	—	6	2	3
Total in 8 years	1972	1707	8	—	182	13	7	25	17	13
1904	228	189	1	—	27	2	6	—	2	3

It will be seen that in 1904, 189 children were successfully vaccinated out of 201 surviving, or nearly 95 per cent. During the 8 years immediately preceding the percentage is equally high.

Measles.—The only death from this disease was in July, the subject being a child between 1 and 2 years of age. This is the only case that came under the notice of the Authority in 1905. It will be remembered that in 1904 measles was epidemic in Middlewich.

Middlewich Urban District.

Scarlet Fever.—One case was notified in February, 1 in April, 1 in August, 1 in September, 1 in December, and 5 cases were notified in November. The 2 cases removed to Hospital were admitted on November 11th and discharged on December 30th.

Whooping-cough.—The patient who died from this disease was a child, 15 months old, reported in November There is no further information.

Diphtheria.—As very many of the cases of diphtheria in 1905 must be regarded as belonging to the outbreak of the disease which commenced in 1904, the District Medical Officer of Health quotes the special report he made in 1904 as a basis for his remarks on diphtheria in 1905.

"A case of diphtheria was noticed on June 18th. 5 cases occurred in July and 1 death, 6 cases in August and 1 death, 20 cases in September and 1 death, 16 cases in October and 2 deaths, 13 cases in November and 1 death, 6 cases in December and 2 deaths. Total, 67 cases and 8 deaths. A special report was made to the Local Government Board and Cheshire County Council on November 5th, in accordance with Art. 18 (15) of the Local Government Board's Order of the 23rd March, 1891. The yearly average of cases for 14 years has been only 2, and the disease has hardly been noticeable save in 1902, when there were 10 cases. In 1905 there were 4 cases, but only one of these occurred subsequently to March, so that (but for that one case in December) there had been a clear interval of 15 months, and it is therefore unlikely that this great outbreak in 1904 was connected with the earlier cases in 1902 and 1903. More than half the cases, including the whole of the earlier ones, were visited by myself, and the whole were visited and most carefully enquired into by the Inspector. The whole of the District was involved, and a few additional cases occurred, I believe, in the immediate neighbourhood of the boundary and outside it, of which of course I have no record. In spite of most painstaking inquiries, I regret to say we were never able to trace the channel of original invasion. During the epidemic we were able to trace close connection (by contact) among the cases forming several small groups. And if to all the known cases we add slight ones, overlooked and un-notified (of which we frequently seemed to have evidence), and also a possible proportion of persons who carried the infection about with them, and were capable of imparting it to others, though never developing the disease themselves, it will at once be seen that a very appreciable proportion of the population must have been affected. No bacteriological examinations were made so far as I know.

Middlewich Urban District.

The epidemic above described continued in 1905 as follows: January, 5 cases, no deaths, February, 5 cases, 1 death, March, 4 cases, 3 deaths, April, 8 cases, 2 deaths, May, 4 cases, 3 deaths. A total in 5 months of 26 cases, with 9 deaths, and in the whole epidemic, just under 12 months, 93 cases, with 17 deaths.

The terrible fatality during the five months of 1905, amounting to no less than 35 per cent. of cases, compelled me to take very unusual steps in putting strong and repeated pressure upon local practitioners to induce them to use anti-toxin. I have broken off the history of 1905 at this point, because it was the first interval in the succession of cases. There was no other case till August, when 1 occurred, and no more till October, when 1 occurred (which proved fatal in a few hours after the doctor was called in), but in November there were 4 cases (2 removed to Hospital, 1 fatal in a few hours after admission), and in December 7 cases (5 removed to Hospital, no deaths), bringing up the totals for 1905 to 39 cases, 7 removed to Hospital, 11 deaths; or from June, 1904, 106 cases, 19 deaths.* "

So far as the Medical Officer of Health is aware, no bacteriological examinations were asked for.

Enteric Fever.—One case was notified in September. Bacteriological examination was twice negative in result, and, when the patient died, death was certified as due to rheumatic fever.

Diarrhœa.—There were 4 deaths from diarrhœa. One of these was a man, 75 years of age, who died on May 31st. The remaining 3 cases were children, who had not completed their first year. They were respectively on July 15th, 24th and 29th.

Puerperal Fever.—One case occurred in the practise of a midwife, and terminated in recovery. It was rumoured that other cases had occurred, but enquiry failed to discover them.

Phthisis.—Only one death occurred, a woman of 38 years, in December. This gives a rate of 0 2, the average for the previous seven years being 0.75.

Other Tubercular Diseases.—Two deaths, both of girls, ages 13 and 2 years, from tubercle of "bowels" and "mesentery" respectively.

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* During January, 1906, there have been 7 more cases, and in fear of the epidemic again assuming serious proportions, I have advised the Council to apply for the assistance of a Medical Inspector from the Local Government Board.

Notification of Phthisis.—One received, making a total of 6 in 5 years.

Cancer was the cause of 2 deaths, a woman 58 years of age, and a woman 72 years af age. The parts affected were respectively the bowels and the breast.

Alcoholism.—A woman 51 years of age died from this disease.

Hospitals for Infectious Diseases.—The Northwich Joint Hospital Board has completed and opened an excellent modern Sanatorium at Davenham, in the Rural District, and Dr. Moreton, of Middlewich, has been appointed Medical Officer. The cases sent in have been already described. For small-pox, the Board proposes to use the Wooden Hospital at Marbury, formerly belonging to the Rural District Council.

Water-supply.—A complete scheme for the supply of water to the District is now before the Local Government Board.

Sewage Disposal.—A complete scheme for improved Sewage Disposal Works is also now before the Local Government Board.

Dairies and Cowsheds are under constant observation by the Inspector, and have all been visited at least once a year by the Medical Officer of Health.

Slaughter-houses.—These are also under constant observation by the Inspector, and have all been visited by the Inspector and Medical Officer of Health at least once a year.

Unsound Meat.—It is commonly believed that meat of a questionable character is often killed and dressed in this District, and sent away for consumption. The nature of the trade demands secrecy, and it is almost impossible to detect offenders.

Factories and Workshops.—A large part of the official Home Office Table is not required for this Report, and the Medical Officer has accordingly condensed it. Factories have been visited, 20 inspections having been made. In consequence, one notice was served and a prosecution undertaken. Workshops were also visited, 101 inspections having been made. There were also 14 inspections of workplaces. In 3 instances there was a want of cleanliness, and in two instances the sanitary accommodation was defective. These defects were made good.

Middlewich Urban District.

General Survey.—The memorandum as to Annual Reports, which is sent each year to Medical Officers of Health, states:—

> "The Report should be chiefly concerned with the conditions affecting health in the District, and with the means of improving those conditions. It should contain an account, brought up to the end of the year under review, of the sanitary circumstances of the District, and of any improvement or deterioration in these circumstances which may have occurred during the year. Care should be taken to Report fully and explicitly on the influences affecting or threatening to affect injuriously the public health in the District, and on the action which has been taken, or which may still be needed, with a view to combat those influences. It is of especial importance that the Medical Officer of Health should record what action has been taken to remedy unhealthy conditions which have been reported by him in previous Annual Reports, or in Special Reports presented during the year under review, and that attention should be called afresh, year by year, to such as remain unremedied."

The Medical Officer of Health notes that twelve subjects, or classes of subjects, are scheduled for discussion and information. He discusses these in the sequence given in the Official Memorandum. His survey is as follows:—

(*a*) "General character of District." A very small District, a portion of the Mid-Cheshire Plain, on the rivers Dane and Croco, and traversed by the North Staffordshire Canal. Lies between Northwich and Sandbach, from north to south, and between Winsford, and Holmes Chapel from west to east. Geologically there is generally about 30 feet of boulder clay, and below this Keupar red marls with grey partings and gypsum, saturated with brine, resting on salt-rock at about 200 feet below Ordnance datum. (I am indebted to Mr. Stocks for the last paragraph).

(*b*) "Occupations." Men are employed in salt making, and in chemical works. Young women are employed at the factory, where condensed milk is made.

(*c*) "House accommodation." The number of cottages is probably not far from adequate, if they were satisfactory otherwise. Unfortunately many of the old cottages are lamentably deficient. They are crowded

together, in several instances, on sites of irregular shape, which dovetail into each other, on different levels, without adequate yard-space or means of access. Insufficient open space. There are also new cottages, free from these defects ; but even in these there is a marked tendency to fill up the back yard with unauthorised wooden sheds, for poultry and pigeons. A few of the worst cottages have been closed under the Housing of the Working Classes Act.

(*d*) "Sewerage and drainage." Cledford Bridge, the southern end of the District, is not sewered ; but plans are now under consideration. A large quantity of brine appears in the sewage at the Outfall. The method of disposal is ineffective, and plans for new Outfall Works are now before the Local Government Board.

(*e*) "Pollution of streams." A good deal undoubtedly takes place, but possibly more outside the District than within it.

(*f*) "Excrement disposal." All old property has privies, or cesspools ; the latter in many cases receive roof water and ground water, and have overflows connected to the sewers. They are frequently in small yards, and at no great distance from the back doors of the houses. Peat-pails have been substituted for them wherever persuasion has been effective. There are a few metal pails. The number of water-closets is not large.

(*g*) "House refuse." Removed by the Council ; very fully reported on by the Inspector in the Annual Reports for 1903 and 1904.

(*h*) "Water-supply." Entirely insufficient. Two or three public "spouts," whose use has been discontinued on account of liability to pollution. Present supply, since 1896, public service, from what was believed to be a spring ; but its failure in dry seasons, and latterly almost altogether, proves that it can be nothing more than a limited catchment area of sand, overlying clay, and perhaps forming a "pocket." An excellent and abundant new supply has lately been found, by boring in the red sandstone in Delamere Forest, and arrangements are now under consideration for utilising it.

(*i*) "Places under supervision." These are frequently inspected, Common lodging-houses, fairly satisfactory. Slaughter-houses, much improved, and mostly satisfactory. Dairies and cowsheds, very various, some unsatisfactory, few kept really clean, two under formal notice. Bake-houses satisfactory. Factories and Workshops, nothing to complain of. Offensive trades, periodically there are complaints with reference to one fat-boiler.

(*k*) "Byelaws." Dated 10th March, 1902.

(*l*) "Nuisances." Notices are ordered by the Council to be served in all cases reported by the Inspector at the monthly meetings. Some, of course, are of a nature which tend to recur.

(*m*) "Infectious diseases." There has been no means of dealing with these until October, 1905; but since that date, two cases of scarlet fever (out of six), and seven cases of diphtheria (out of eleven), have been removed to Hospital, up to the end of 1905. There is no difficulty about notification. The Hospital is well equipped in every way, including a steam disinfector. The weak points, at present, are the objection of an occasional parent to allow removal, and the impossibility af attaining satisfactory isolation at home, in houses of the class described, and among people who are not yet educated up to it; and the difficulty of effecting thorough disinfection of rooms, bedding, and clothing.

From the above brief consideration of the circumstances it will be seen that there are serious defects in the District, which create difficulties for the Council; but it must in fairness be observed that they are almost entirely legacies from bye-gone times, and are the misfortune, and not the fault, of the administrators of to-day.

Inspector's Report.—The Inspector has been so fully occupied as Engineer of the Water Scheme and the Sewage Disposal Scheme, that he has had no time to prepare a Report on the details of his work as Inspector. The following Table, giving a summary of work done, is submitted.

Nuisances in 1905.		Inspections and Observations made.
Dwelling Houses and Schools.	Foul Conditions	...
	Structural Defects	...
	Overcrowding	5
	Unfit for Habitation	...
	In connection with cases of Infectious Disease...	182
	Lodging Houses	12
	Dairies and Milkshops / Cowsheds	67
	Bake-houses	18
	Slaughter-houses	24
	Canal Boats	50
	Ashpits and Privies	153
	Deposits of Refuse and Manure	7
	Water Closets	...
House Drainage.	Defective Traps	8
	No Disconnection	3
	Other Faults	7
	Water Supply	...
	Pigstyes	20
	Animals improperly kept	...
	Offensive Trades	5
	Smoke Nuisances	1
	Other Nuisances	25
	Totals	587

In all 23 formal notices were served for the abatement of nuisances.

MOTTRAM

Urban District.

Medical Officer of Health—Dr. W. E. S. Burnett.
Population at Census, April 1st, 1901—3,128.
Estimated Population in middle of 1905—3,128.
Area in acres—1,084.
Birth-rate per 1,000 living—21.1.
Death-rate per 1,000 living.—12.1.
Death-rate from seven principal Zymotic Diseases—1.6.
Deaths under one year to 1,000 births—121.

The population of this Urban District was 3,270 at the Census in 1891, and 3,128 at the Census in 1901. Thus, during the decennium, 1891-1901, there was a decrease in the population of 142. It is estimated that the population has not increased since the Census.

In 1904, the number of births registered in the District was 66, and the number of deaths registered in the District was 36. To the latter it is proper to add the deaths of two residents which took place beyond the District, making 38. The birth-rate is 2.8 below the corrected average in the District, in the years 1895-1904, and the death-rate is 3.6 below the corrected average in the same 10 years.

Infant Mortality.—Seven deaths were of Infants under a year old. This number is equal to 121 per 1,000 births. In 1895-1904 the deaths of infants in the District were equal to 150 per 1,000 births. This decrease is very satisfactory. Included in the 8 deaths were 3 due to premature birth. These infants only lived a few hours. The fall in the infant death-rate is doubtless in part due to dwelling-houses being better drained and scavenged than they used to be.

Infectious Diseases.—There were 14 cases of infectious disease notified in 1905, viz.:—4 diphtheria, 1 membranous croup, 4 scarlet fever, 3 enteric fever, and 2 erysipelas. None of these cases were removed, except one of the cases of erysipelas.

Diphtheria and Membranous Croup.—These diseases being practically identical may be considered together. As four out of five notified cases proved fatal, the mortality is remarkable. The first case occurred in Crescent Road, and the second in Old Street, both in July; the third occurred in Gorsey Brow, in October, and the last two at Hodge Lodge, in

November. As these cases were scattered, and occurred at different periods, it is evident that they had no common source of origin. In two instances, obvious insanitary conditions existed on the premises. The child in Gorsey Brow evidently contracted the disease whilst on a visit to Chester, as she became ill the day after her arrival at home. The antitoxin treatment was adopted in some of the cases, but unfortunately the Medical man was not called in during the earlier stage of the disease. The Medical adviser being called in late is not uncommon, the parents attributing the symptoms to ordinary cold.

Scarlet Fever.—One of the cases of this disease occurred in June in Mottram Road, and the two others in December in Mottram Moor. The source could not be traced. All three cases were of mild character.

Enteric Fever.—One case was in March in Market Street, Broadbottom; another in October at Crescent Road; and the third in November, at Mottram Road. In one instance the patient came into the District suffering from the disease. In the second case the patient was a traveller, who most probably contracted the disease when away from home. As regards the third case, the drains of the premises where he lived were defective.

Erysipelas.—The first case occurred in February. It was mild, and no sanitary defects were found on the premises. The second case was notified in December, and was due to an injury to the face. The man was removed to Ashton Infirmary, where he died.

Preventing the Spread of Infectious Disease.—On receipt of notification of infectious disease the premises are examined, and where defects are found, the owners are served with notices to remedy them. The patients are isolated, as far as possible, and their clothes and bedding disinfected by the Inspector. Such disinfectants as are required while the patients are ill are gratuitously supplied. The parents of children suffering from infectious disease are given a printed paper, specifying the precautions which should be observed in each case, and instructed to prohibit all other members of the family from attending school, and other people's children from entering the infected house, until all risk of infection is over. Information is given to the Schoolmaster.

Isolation Hospital.—The small-pox Isolation Hospital was erected in 1903, being ready to receive patients in Octo-

ber. It is provided jointly by Hollingworth and Mottram Urban Districts and Tintwistle Rural District. A nurse has been appointed, and a suitable ambulance has been obtained.

Infectious Disease (Prevention) Act, 1890.—This Act has been adopted by the District Council, and came into force in June, 1903.

Public Health Acts (Amendment) Act, 1890.—Part 3 of this Act (containing sanitary and other provisions, likely to prove useful) was adopted by the Council during 1901.

Water-supply.—The public supply, which is taken from the Manchester Corporation Reservoirs (Arnfield Springs), is good and plentiful. A few houses are supplied from wells.

The Factory and Workshop Act, 1901, has had attention. There are 5 Factories and 32 Workshops in the District, all duly registered. Three of the Factories are (in size) practically only Workshops. Most of the Workshops are of a domestic character, and the business premises generally consist of a separate room in the dwelling-house. In this room only one person is often engaged. All premises are periodically inspected by the Medical Officer of Health and Sanitary Inspector. All were found in perfect order, except that the chimneys of two bakehouses were too low, causing a smoke nuisance.

Sewage Works.—The method of treatment is by tanks, filters, and land. The Mersey and Irwell Joint Committee's Inspector reported upon the samples taken as good and fair effluents.

Sanitary Improvements in Contemplation.—Plans of considerable importance from a sanitary point of view, and for the convenience and benefit of their employees, have been submitted by the Broad Mills Company, and approved by the Council. The Company own about 80 cottages, which form three streets parallel with each other, crowded together on sloping ground, near the factory; many of them without back doors, or means of proper ventilation, and in an insanitary condition generally. It is now proposed to pull down the row of cottages forming the upper side of the middle (Old Street) street, and all existing closets, on the whole of the property; to put back doors to the houses on the lower side of New Street; make gardens or yards to the whole of the remaining cottages, and build 60 new closets, ashpits, and coal

places, so that each house will, after these alterations are completed, have its own separate closet, ashpit, and coal place.

A good deal of structural work has been carried out during the year in building new closets, ashpits, and laying new drains on various properties in the District.

Abatement of Nuisance.—The Sanitary Inspector reports that insanitary conditions discovered in the course of systematic inspection have had his attention, and for the most part have been abated. A number of the nuisances were due to drains being defective or obstructed, and these drains have been put in order.

Refuse Removal.—The Scavenging of middens, etc., has been efficiently carried out by the contractor, under the supervision of the Inspector. The middens, etc., are emptied monthly.

NANTWICH

Urban District.

Medical Officer of Health—Dr. J. D. Munro.
Population at Census, April 1st, 1901—7,722.
Estimated Population in middle of 1905—7,842.
Area in acres—703.
Birth-rate per 1,000 living—27.6.
Death-rate per 1,000 living—16.1.
Death-rate from seven principal Zymotic Diseases—2.0.
Deaths under one year to 1,000 births—147.

The population of this Urban District was 7,412 at the census in 1891, and 7,722 at the census in 1901. Thus during the decennium, 1891-1901, the population increased by 310, that is about 4 per cent. The estimate of the population made for the middle of 1905 (7,842) is probably as nearly correct as possible.

During 1905, the number of births registered in the District was 217, and the number of deaths registered in the District was 137. Fifteen of these deaths, in the Workhouse Hospital for Women (Nantwich Urban District) were of persons not belonging to the District, and five deaths in the Men's Hospital (Nantwich Rural District) were of persons who belonged to the District. The number of deaths of persons belonging to the District was therefore 127. The birth-rate is 2.8 below the average in the 10 years 1895-1904, and the death-rate is 2.6 below the average in the same 10 years.

Nantwich Urban District.

The number of deaths belonging to the District was 35 in the first quarter, 38 in the second, 31 in the third, and 23 in the fourth.

Infant Mortality.—Thirty-two of the deaths belonging to the District were of infants under one year old, viz. :—1 measles, 1 whooping-cough, 8 diarrhœa, 1 enteritis, 1 tubercular disease, 6 infantile debility, 5 marasmus, 2 premature birth, 2 convulsions, 1 syphillis, 1 stricture of œsophagus, 1 spina bifida, 1 tabes mesenterica, 1 pulmonary atelectasis, and 1 injury at birth.

Zymotic Diseases.—There were 25 cases of infectious disease notified in 1905, viz. :—3 diphtheria, 1 membranous croup, 12 scarlet fever, 1 puerperal fever, and 18 erysipelas. No case of infectious disease was isolated in Hospital during 1905. There were 16 deaths from zymotic diseases, viz. :—7 from measles, 1 from whooping cough, and 8 from diarrhœa. The zymotic death-rate was equal to 2.0 per 1000 living.

Isolation Hospital.—In the report for 1903 it was stated that a loan had been sanctioned for the purchase of a site at Alvaston, that the Joint Hospital Board had directed plans to be prepared for the necessary hospital buildings, and that application had been made to the Local Government Board to sanction a loan for £6,800 for the same. At the Local Government Board Inquiry, held on December 3rd, 1903, it was stated that an Observation Block should also be provided, for which an additional £1,000 would be required. Accordingly plans for an Observation Block were prepared and sent in, and permission to borrow an increased sum was asked for. The loan was sanctioned. Contracts for the erection of the Hospital were shortly afterwards entered into, and the building was completed before the close of the year 1905. It is, however, not yet furnished.

Small-pox Hospital.—The Nantwich Urban District Council having transferred to the Nantwich Joint Hospital Board the temporary Small-pox Hospital at Ravensmoor, there is provision for the isolation of small-pox cases which may arise in the Joint Hospital District. This Hospital is always kept aired and in readiness for use. It was not required during 1905.

Measles.—This disease was epidemic during the first and second quarters of the year. The disease was at first confined to the scholars at the Wesleyan Schools, which were closed for three weeks in the beginning of February. The children at the Church and Wood Street Schools were affected later, and it was necessary to close these schools also for a similar length of time. Seven

deaths were reported from measles, the disease being complicated by bronchitis or pneumonia in five of these cases.

Whooping Cough was prevalent in the District during the latter part of the year. The only sufferer who died therefrom was an infant two months old. In this case the disease was complicated with pneumonia.

Diphtheria.—Three cases were notified as diphtheria, and 1 as membranous croup. The premises were carefully examined in each case, and found to be in good order.

Scarlet Fever.—Twelve cases occurred in the District during the year. They were mostly of a mild type, and all recovered. Strict precautions were enforced as to isolation and disinfection, and the results obtained were satisfactory. At the end of the year the District was free from scarlet fever and other infectious disease.

Diagnosis of Diphtheria and Enteric Fever.—The cost of examining pathological material from doubtful cases of diphtheria and enteric fever is paid for by the District Council. The work is done at the Pathological Diagnosis Department of the Liverpool University.

Free Supply of Antitoxin.—In November, 1902, the Medical Officer of Health was empowered to supply antitoxin free to Medical Practitioners in the District, for the prevention and treatment of diphtheria among the poor.

Diarrhœa.—All the fatal cases of this disease were infants under a year old.

Tubercular Disease.—Phthisis was the cause of death in 8 cases, thus the phthisis death-rate was equal to 1.04 per 1,000 living. There were also 2 deaths from other tubercular diseases.

Heart Diseases.—Eleven deaths were ascribed to heart diseases, giving a death-rate of 1.4 per 1,000 living.

Coroner's Inquests.—The following inquests were held during the year :—

1.—Man, 71 years, verdict, "natural causes, heart failure."
2.—Man, 41 years, verdict, "laudanum poisoning."
3.—Man, 49 years, verdict, "found drowned."
4.—Man, 58 years, verdict, "run over by motor bus."

5.—Child, 22 months, verdict, "scalded by boiling water."
6.—Infant, 8 months, verdict, "convulsions."
7.—Woman, 22 years, verdict, "natural causes, phthisis."
8.—Man, 86 years, verdict, "burns."

The Infectious Disease (Prevention) Act, 1890, was formally adopted in the Autumn of 1900. It gives increased control over the milk supply, and increased powers of disinfection. It prohibits the retention of dead bodies in certain cases, and gives Justices power in certain cases to order dead bodies to be buried. It also gives them power to order an infectious person, without proper lodging or means of isolation, to be detained in Hospital until free from infection. It forbids the throwing of infectious rubbish into ashpits.

New Houses.—Seventeen new houses have been completed and certified as fit for habitation during the year.

Improved Property and Closet Accommodation.—Eighty-five notices served upon owners to improve the sanitary condition of their property have been complied with. Eight midden closets have been replaced by 3 w.c.'s and 5 pails.

Sewage Disposal.—Mr. Baldwin Latham recommended certain land outside the District as suitable for Sewage Disposal. The Council were unable to come to agreement with the owner of the land, and therefore resolved to take the same by compulsion. Parliamentary plans were prepared, showing a scheme for which a provisional order was applied for to acquire the land, and the Local Government Board Inquiry in connection with this matter was held on January 17th, 1906.

Sewers.—The intercepting sewer in Shrewbridge Lane has been completed, coupling up the Park Road Outfall with the general system of sewers in the District.

Water-supply.—The Council resolved to consider the question of supplementing the present water-supply. Negotiations for acquiring a site for the construction of new waterworks have extended over the past twelve months, and are now practically completed.

With the increased use of water for sanitary purposes, it has been found difficult to maintain a full supply of water to the town from Baddiley Waterworks, and the pressure of water has at times been very defective.

Private Street Works Act, 1892.—Albert Street has been sewered and made up under the provisions of this Act.

Common Lodging-houses receive attention. There are 5 on the register. There does not appear to be any necessity for increasing the number at present. They have been regularly visited and found to be clean and orderly. No infectious disease or overcrowding has occurred.

Dairies and Cowsheds.—There are nine dairies and cowsheds in the District. All have been inspected frequently, and found in good order.

Slaughter-houses.—There are 14 in the District. They have all been regularly inspected, and found in a cleanly state. As has been previously pointed out, not one of the existing slaughter-houses meets the requirements of the Local Government Board. A public abattoir in the District would be of much service.

Factories.—There are six clothing factories and four shoe factories in the District. The sanitary accommodation at all of these is now satisfactory.

Canal Boats.—The Inspector reports that the condition of the boats generally has improved, and he has only found two defective during the year.

The Baths and Wash-houses Act was adopted in 1904.

Nantwich Urban District Council Act received Royal Assent on 21st July, 1903. It contains important provisions as to milk, infectious diseases, and sanitary matters generally.

NESTON & PARKGATE

Urban District.

Medical Officer of Health—Dr. G. A. Kenyon.
Population at Census on April 1st, 1901—4,154.
Estimated Population in middle of 1905—4,386.
Area in acres—3,267.
Birth-rate per 1,000 living—25.3.
Death-rate per 1,000 living—12.3.
Death-rate from seven principal Zymotic Diseases—0.9.
Deaths under one year to 1,000 births—108.

The population of the Urban District was 3,577 at the Census in 1891, and 4,154 at the Census in 1901. The increase

in the population during the decennium, 1891-1901, was thus 577, that is, 16.1 per cent. The estimate of the population made for the middle of the year 1905 is arrived at by adding to the Census population four-tenths of the increase during the decennium 1891-1901.

The Census population of the three Wards is as follows :—

Leighton and Parkgate	...		1,061
Little Neston	...	...	1,225
Neston ...	...	...	1,868

The number of births registered in the District was 111, and the number of deaths registered in the District was 46. To these deaths have been added, the deaths of 5 persons in the Workhouse, of 2 persons in the Isolation Hospital, and of 1 in Chester Infirmary, making 54 persons belonging to the District who died during the year. The birth-rate is 7.2 below the average in the District in 1895-1904, and the death-rate is 5.7 below the average in the same 10 years.

Twelve of the deaths were of infants under a year old, and 17 were of persons 65 years old and upwards.

There were 4 deaths from the principal zymotic diseases, viz. :—3 scarlet fever and 1 diarrhœa. There were 2 deaths from epidemic influenza, 3 from phthisis, 3 from cancer, 4 from bronchitis, 5 from pneumonia, 2 from premature birth, 7 from heart diseases, and 1 from accident.

Cases of Infectious Disease notified.—There were 46 cases of infectious disease notified, 2 diphtheria, 42 scarlet fever, and 2 enteric fever. There were 31 cases of scarlet fever and 2 cases of enteric fever removed to the Isolation Hospital. Thus 71.7 per cent. of the known cases of infectious disease were removed to Hospital.

All the cases of infectious disease were duly investigated, and steps were taken for preventing the spread of disease, for the disinfection of premises, and for removing sanitary defects discovered.

Scarlet Fever.—Except as regards scarlet fever there has been very little prevalence of infection. From the 30th of October, 1904, until the 20th of April, 1905, a period of nearly six months, there was not a case of any kind notified. In September two children were found in one of the Schools with their skin peeling. This was associated with several cases, and the school was closed by the Managers for some weeks, as a precautionary measure.

However, attendance at school had not much influence in spreading infection, many of the persons attacked being above school age, and many below. The disease was prevalent in Birkenhead and Liverpool, with both of which towns there is constant communication.

Inspection.—The Medical Officer of Health visited the District from time to time, and made general and special inspections, subsequently reporting on points of detail in connection with sanitary work.

Water-supply.—The District has a good supply from its own waterworks, the water being derived from deep wells. The water is of very high organic purity. Seven new houses have been newly supplied during the year. There was no extension of the water mains during 1905.

Sewerage and Outfall Works.—Neston and Parkgate are sewered, and the extensions needed are provided from year to year. During 1905 there were 140 lineal yards of stoneware pipe 9-in. diameter laid on the east side of Gladstone Road.

The newly constructed bacteria beds are now in working order. The sewage passes through tanks to the beds, where it is treated by double contact. A filter is also provided for storm water.

Sewage Flushings.—Automatic flushing tanks are provided at the dead-ends of the sewers. The sewers are all flushed periodically.

Sewer-ventilation is provided for by surface grids, and upcast shafts.

Refuse Removal.—The disposal of excreta is still largely done by means of combined ashpit-privies. The emptying and cleaning is done monthly (occasionally twice a month) by the District Council's employees. During the year 2435 tons of refuse were removed to the tips or agricultural land, twenty-six of the privies were converted into water-closets during 1905.

The District Council have under consideration the erection of a destructor, as it is not easy to find suitable places for tipping refuse within a convenient distance.

Building Bye-laws.—The model bye-laws of the Local Government Board, with respect to new streets and buildings, have been in force since 1893.

Neston and Parkgate Urban District.

Report of Inspector and Surveyor.—Mr. Senior, the Inspector and Surveyor, makes a very careful and satisfactory report. He has received 30 complaints, which have been attended to. He has made 435 inspections, and 821 re-inspections of houses, premises, &c. Eleven formal orders were issued for sanitary amendment of premises. At 127 houses the drains were repaired, cleansed, trapped, &c. Seven accumulations of refuse were removed. Two cases of overcrowded dwelling-houses were reported and attended to.

Factory and Workshop Act.—The duties imposed by this Act are receiving attention. A register has been formed, and in this are registered 1 factory, 10 bakehouses, and 11 other premises, occupied by builders, milliners, dressmakers, and laundry proprietors. All have been inspected, and found in good order.

Dairies and Cowsheds.—Thirty dairies and cowsheds have been regularly inspected.

Slaughter-houses.—Three slaughter-houses were regularly inspected.

Isolation Hospital Accommodation is provided through the Wirral Joint Hospital Board, to which the District contributes.

A New Cemetery was found necessary in 1904, and steps were taken to provide it. Its construction is now practically completed, with the necessary chapel and lodge. A portion of the burial ground is awaiting consecration.

NORTHWICH

Urban District.

Medical Officer of Health—Dr. H. E. Gough.
Population at Census on April 1st, 1901—17,611.
Estimated Population in Middle of 1905—18,750.
Area in acres—1,397.
Birth-rate per 1,000 living—27.6.
Death-rate per 1,000 living—13.0.
Death-rate from 7 principal Zymotic Diseases—0.9.
Deaths under one year to 1,000 births—115.

This Urban District is co-terminous with the Civil Parish bearing the same name. It takes in the former parishes of Witton-cum-Twambrooks (including a formerly detached

part of the parish of Leftwich), Northwich, and Castle Northwich, and parts of the parishes of Hartford, Winnington, and Leftwich.

The population of the Urban District was 14,914 at the Census in 1891, and 17,611 at the Census in 1901. The increase in the population during the decennium, 1891-1901, was thus 2,697, that is 18 per cent. The estimate of the population made for the middle of 1905 is 18,750.

The inhabited houses and Census population of the three wards of the Urban District are as follows:—

	Inhabited Houses.	Census Population.
Castle Ward ...	1,115	... 5,434
Northwich Ward...	638	... 3,263
Witton Ward ..	1,813	... 8,914

During 1905, the number of births registered was 519, and the number of deaths registered (excluding 15 deaths of non-residents, and including 6 deaths of residents registered beyond the District) was 244. The natural increase in the population in 1905 was thus 275. The birth-rate is about 5.7 below the average in the District in 1895-1904, and the death-rate is about 4.8 below the average in the District in the same ten years. Among the deaths were 18 from the principal zymotic diseases, viz.:—3 diphtheria or membranous croup, and 15 diarrhœa. There were also 6 deaths from epidemic influenza, 9 from enteritis, and 1 death from puerperal fever.

Infant Mortality.—In 1905 there were 60 deaths of infants under a year old; a number equal to 115 per 1,000 births. In 1895-1904, the proportion of infants who died during their first year, to each 1,000 born, was equal to 177. Of the 60 who died, 14 were under a month old. The chief causes of deaths of infants were as follows:—12 diarrhœa, 6 enteritis, 7 tubercular diseases, 3 bronchitis, 7 pneumonia, 5 premature birth, 4 convulsions, and 4 marasmus. A glance at this list shows that many of these diseases are of a preventable nature.

Illegitimacy.—Only 3 deaths were of illegitimate children, and one of these was due to malformation at birth. Another was due to congenital syphilis, the age at death being 1 year, and the third was due to pneumonia, the age at death being 9 months.

Northwich Urban District.

Cases of Infectious Disease notified.—The number of cases of infectious disease notified in 1905, was 144, viz.:—36 diphtheria, 78 scarlet fever, 5 enteric fever, 3 puerperal fever, and 19 erysipelas. Of these 15 cases were removed to the Isolation Hospital, viz.:—5 diphtheria, 5 scarlet fever, and 5 enteric fever.

Diphtheria was widespread, and no particular connection between cases could be traced. Three cases occurred in one family, the first sufferer being dead when the notifications were received. The other two cases were removed to Hospital, where one proved fatal.

Bacteriological Examinations.—The District Council have made arrangements for the bacteriological examination of material from suspected cases of diphtheria and enteric fever. In 1905, more use was made of the facility thus afforded for securing an aid to diagnosis in doubtful cases of these diseases. During the year 24 specimens of pathological material were sent to Professor Delépine, and he reported thereon. In 18 instances the report was positive, and in six negative.

Eleven other negative reports were received, of cases which were not notified.

Scarlet Fever.—These cases were for the most part of an exceedingly mild nature. Though 78 were notified, there was not a single death.

Isolation Hospital Accommodation.—Up to October 1st, the old Hospital at Wade Brook was in use, seven cases being treated there, of which 3 were cases of diphtheria, and 4 were cases of enteric fever. All the patients made good recovery.

The new Isolation Hospital, belonging to the Joint Hospital Board, has been in use since October 1st. It is situated in the parish of Leftwich. Eight cases from this Urban District were removed to Hospital, viz.:—2 of diphtheria, 5 of scarlet fever, and 1 case of enteric fever. As already stated, one of the cases of diphtheria proved fatal.

Water-supply.—The whole town is supplied by the District Council's mains from the Cote Brook Waterworks, a supply of great purity. However, the quantity is limited, and during 1905 this necessitated cutting off the supply during the night, for a long period. To meet the increased

demand, a Committee has been appointed to consider the advisability of sinking a new bore-hole at the Cote Brook Waterworks.

Factory and Workshop Act, 1901.—The requirements of this Act are duly enforced. There are at present 172 premises on the register. A considerable amount of sanitary improvement has been effected. In the course of the inspections made, defects were found on 36 premises, all of which have since been remedied. No prosecutions have been necessary. The premises on the register include 16 factories, 16 bakehouses, 22 dressmakers, 11 tailors, 19 bootmakers, 10 confectioners, 11 plumbers, 11 joiners, 9 milliners, the remainder being blacksmiths, saddlers, jewellers, stone-cutters, cabinet-makers, etc.

Private Streets.—A large number of streets are now being paved, under the provisions of the Private Streets Works Act, 1892. The objections of owners will be brought before the magistrates at an early date. The streets to be made are—Sydney Street, Parliament Street, Gladstone Street, Park Street, Pleasant Street, Zion Street, Chapel Street (part of), Beeston Street, David Street, Ryder Street, St. James Street, Weaver Road, Dock Road, Limekiln Lane, Back passage between Oak Street and Ash Street, Cross Street between Greenall Road and Victoria Road, James Street (part of).

That this will be an improvement is self-evident. Some of these streets, notably Parliament Street, Gladstone Street, and Dock Road, are almost impassible at times of rain, and as houses open directly on these with a very small step up from the street level, they are particularly in need of repair; some of the others are also in a very bad state, and these sodden cinder roads are fruitful sources of ill-health.

Housing of the Working Classes.—In this District there are many houses which, owing largely to subsidence suffer from rapid dilapidation and deterioration; there still remain many two-roomed houses in the District, and many others have no enclosed yard of any kind.

There is here, as elsewhere, a large opening for good cottages with open spaces or gardens near them, to supply the essentials of sunshine and fresh air to the inhabitants.

New Houses.—Nineteen new houses were built in 1905.

Northwich Urban District.

Overcrowding.—Only nine cases of overcrowding have been reported. These nuisances were abated after verbal notice.

Sewerage Works.—The Castle sewerage scheme continues to work satisfactorily, and most of the property has now been joined up to it.

The low-lying part of the town on the N.E. side of the river is in a bad state as regards drainage, the subsidence causing the sewers to be waterlogged, when the river is at all high. The County Council have agreed to an arrangement by which some scheme for the better sewering of the town, and the improvement of the river Weaver, which is polluted by the present system, shall be in course of operation in two years.

Outfall Works.—The sewage-disposal works at Winnington appear to be working well, the effluent being satisfactory. About 300 trees were planted round the ground, and there is no doubt they will form a good screen, anl protect the tanks from the various winds.

Refuse Removal.—This work is done under contract. The contents of privies, as well as house refuse, have been more regularly and satisfactorily removed in 1903-1904-1905, than for many years before. The work is done under three contracts; one for East Witton, one for West Witton and Northwich Wards, and one for Castle Ward. All these contractors have tips outside the Council's District. The tips for the excreta are covered with lawn-bark, almost completely doing away with the foul smells that arise from these places. The dry house refuse is covered over with soil, and the waste paper destroyed by fire.

An improvement has been made in the system of removing the dry refuse from boxes, etc., in the main streets, the ashes are now carried in hampers direct to the carts, without being deposited in the road. Disinfectants are freely used by contractors for the removal of house refuse, as it is highly important that each ashbox or bin should be thoroughly disinfected.

Through the carelessness or ignorance of many householders a considerable amount of refuse which might readily be burnt, is left to ferment and decompose, close to dwelling-houses, causing a nuisance, and occasional sickness. Refuse from the kitchen and scullery should be destroyed by fire, and not put in the ashpits or ashbins, to decompose and throw off its most dangerous odour.

Northwich Urban District.

The Inspector, Mr. Charles Potts, reports that during 1905, the scavengers removed 4288 loads of dry refuse, and 2,900 loads of excreta. The excreta is removed outside the Council's District, where it is utilised as manure. Disinfectants are largely used by the men, so as to prevent the creation of any nuisance.

Sanitary Improvements.—The Inspector reports that many house owners are voluntarily converting privies and middens into water-closets and ashbins. This, of course, reduces the expense of refuse removal, and improves the sanitary condition of dwelling-houses.

A Refuse Destructor needed.—The Inspector reports that a destructor would be of great use, and would provide a means of getting rid of trade refuse from the shops, which the District Council do not collect and destroy at present.

Nuisance Abatement.—The Inspector reports that 27 formal notices have been served on property owners for the abatement of nuisances, and in all cases the work required has been carried out. In a great many instances the abatement of nuisances has been effected by means of correspondence with owners, or verbal notices only. In forty-eight instances lengths of house drains have been taken up and relaid. In connection with this work many defective traps have been replaced with good ones, and many additional ventilators have been put in. In 11 instances dirty premises were cleansed and disinfected. In 4 cases accumulations of manure have been removed.

Smoke Nuisance.—On 4 occasions a nuisance from black smoke was reported from works, and the defaulter was written to by order of the Council. Legal notices had to be served before the Council's request was complied with.

Systematic Inspection has been carried out periodically. The Medical Officer of Health inspects the District from time to time; and the Sanitary Inspector goes over the District regularly. In this way many nuisances are discovered and abated.

Common Lodging-houses.—There are 7 of these houses on the Register. One was reported for filthy bedding, and another had to be limewashed and disinfected.

Dairies and Cowsheds have been visited periodically by the Inspector. On six occasions limewashing of premises was ordered.

Slaughter-houses.—The 18 slaughter-houses in the District have been duly inspected. Five were ordered to be limewashed and cleaned, and five butchers were ordered to deal effectively with the offal.

No Canal Boats are at present on the Council's Register. The boats plying on the part of the river within the District come under the Merchants' Shipping Act.

RUNCORN

Urban District.

Medical Officer of Health—DR. F. MCDOUGALL.
Population at Census on April 1st, 1901—16,491.
Estimated Population in middle of 1905—17,400.
Area in acres—1,275.
Birth-rate per 1,000 living—31.5.
Death-rate per 1,000 living—16.4.
Death-rate from seven principal Zymotic Diseases—1.1.
Deaths under one year to 1,000 births—120.

The population of this Urban District was 20,050 at the Census in 1891, and 16,491 at the Census in 1901. The decrease in the population during the decennium 1891–1901 was thus 3,559, that is 17.75 per cent. The estimate of the population made for the middle of the year 1904 appears to be warranted.

In 1905 the number of births registered in the District was 549, and the number of deaths registered in the District was (including the deaths of 12 persons which took place in the Workhouse at Dutton, and a death which occurred on board a Canal Boat at Grappenhall) was 286. The birth-rate is 0.1 below the average in this District in 1895–1904, and the death-rate is about 2.3 below the average in the District in the same 10 years.

Cases of Infectious Disease notified.—The number of cases of infectious disease notified in 1905 was 176, viz.:—1 cholera, 49 diphtheria, 5 membranous croup, 30 scarlet fever, 43 enteric fever, 36 other continued fever, 3 puerperal fever, and 9 erysipelas. One case of diphtheria, 1 case of scarlet fever, and 20 cases of enteric fever, were removed to the Isolation Hospital.

Runcorn Urban District.

The number of cases notified in 1904 was 303, the number of cases notified in 1903 was 186, the number of cases notified in 1902 was 269, the number of cases notified in 1901 was 183, the number of cases notified in 1900 was 95, the number notified in 1899 was 261, the number notified in 1898 was 317, the number notified in 1897 was 282, and the number notified in 1896 was 183.

Zymotic Mortality.—There were 19 deaths from the 7 principal zymotic diseases, viz. :—3 whooping-cough, 4 diphtheria or membranous croup, 5 enteric fever, and 7 diarrhœa. There were also 4 deaths from epidemic influenza, and 1 death ascribed to cholera. The death-rate from the principal zymotic diseases was thus only 1.1 per 1,000 living, in 1905. In the previous years this death-rate was equal to 4.9 per 1,000 living.

Diphtheria and Membranous Croup.—There were 49 cases notified as diphtheria, and 5 notified as membranous croup. Of the cases notified as diphtheria, 6 were reported during the first month of the year, and thirty-four cases were notified during the last six months of the year. Nine cases were notified during the months of March, April, May, and June. Thirteen cases were distributed over five houses, and the remainder were single cases. Ordinary sore throats were somewhat prevalent during the fall of the year.

Scarlet Fever.—Thirty cases were notified during 1905, as compared with one hundred and fifty-three cases notified during the preceding year. Fifteen houses were infected in 1905. In one house there were 5 cases, and in another four cases, in another three cases. At six houses there were two cases in each house. Several cases were imported from outside the District.

Whooping-cough (which was the cause of 16 deaths in 1904) caused three deaths during the first quarter of 1905. All the three deaths were of children.

Enteric Fever.—There were 43 cases notified, five of which proved fatal. One of the fatal cases was registered in September, and four were registered in December.

Continued Fever.—There were 36 cases notified as continued fever, all of which recovered.

The Medical Officer of Health points out that it is very difficult to define continued fever, unless indeed it be enteric fever in disguise. Taking the two diseases together, the cases notified number 79, and the case mortality does not appear to be excessive.

The sanitary condition of all the houses affected was closely inquired into. Except in a few instances, no obvious sanitary defect was discovered. In two instances cellar drains were noticed, in a neglected state. However, many of the houses were dirty, and some overcrowded. The milk and water supply was closely scrutinised, and investigated with negative results.

Erysipelas.—In 1905, there were 9 cases notified, which compare with 16 cases in 1904. These cases rarely end fatally, and may represent anything, from an inflamed scratch to an attack of true erysipelas. Constitutional causes, dirt, neglect, and climatic conditions, are more often the cause of the onset than alleged insanitary environment.

Diarrhœa.—There were 7 deaths registered as due to diarrhœa, and 12 as due to enteritis. Five of those as certified as dying from diarrhœa, and 8 of those certified as dying from enteritis, were infants under a year old, thus there was no very remarkable prevalence of diarrhœa in 1905.

Inattention by those in charge of the infants, errors of diet, and insanitary surroundings appear to be the main causes in the production of the disease.

Cholera.—A case of this disease in an adult was duly notified, and when a fatal termination resulted, the death was certified and registered as due to cholera. The Medical Officer of Health does not think that it is necessary to call special attention to this case, as it was not of the asiatic type. Possibly the person who thus died was prone to an attack of british cholera.

Isolation Hospital Accommodation.—During 1905, the small Isolation Hospital was continually kept in readiness, and used when isolation at home was not practicable. There was one case of diphtheria isolated, as well as one case of scarlet fever. Twenty of the cases of enteric fever were also isolated.

Tubercular Diseases.—There were 15 deaths from phthisis, which are equal to a phthisis death-rate of 0.86 per 1,000 living. There were also 22 deaths from other tubercular diseases, thus the entire death-rate from all forms of tuberculosis is equal to 2.12 per 1,000 living.

Cancer.—The nine deaths from cancer are equal to a death-rate of 0.51 per 1,000 living.

Systematic Inspection.—The District is under continuous inspection; some parts daily. There is no place, no

house, no backyard that has not been examined during some part of the year. Defects discovered or pointed out have been remedied, and it has not been necessary to take legal proceedings in any case. In most cases property owners give willing attention to the recommendations of the Authority.

Water carriage is insisted on in all new properties.

Water-supply.—This is obtained at present from a deep well situated on Runcorn Common. The well is about 300ft. in depth, and apparently about 70ft. below the bed of the River Mersey. The water is pumped into a large receiver, situated on Runcorn Hill, and is distributed by gravitation to the whole District. The water used to be supplied through a Limited Company, but the Urban Authority have discharged the duty for about twelve years. The supply is plentiful, a quarterly examination is made of the water, either analytically or bacteriologically, and a Report is made to the Authority thereon. Up to the present no trace of sewage contamination has been obtained, or anything to indicate such pollution.

Factory and Workshop Act.—The Medical Officer of Health and Mr. Wilding, the District Surveyor, report that 69 workshops under this Act had been duly inspected. As regards the sanitary condition of workshops, the cleanliness, with few exceptions, was satisfactory, the air-space was adequate in each case, and the ventilation sufficient, if used ; but there is difficulty in getting the people to use the means provided. The drainage of floors is attended to properly, and the sanitary condition is suitable in each case. The only defects found were want of cleanliness in twelve instances. Notices were accordingly served on the owners, and the defects were remedied.

Arrangements as regards bake-houses are satisfactory. The domestic workshops are in good order. The register is kept as directed.

Sewerage Arrangements.—Prior to the time of the making of the Manchester Ship Canal, all the sewage of the Township was conveyed by seven different sewers which discharged their contents into the River Mersey. Since the making of the Canal six of these sewers have been diverted into an intercepting sewer of large capacity, which runs parallel to the Canal, and is syphoned under it a little below the southern end of No Man's Land, and discharges into tidal waters, a tidal valve being provided. There are two large man-holes, one on each side of the Canal, enabling the sewer to be examined from time to time. A

heavy chain passes through the sewer from man-hole to man-hole, and is worked by a winch at the top of each man-hole, thus keeping the contents of the sewer in motion and preventing the collection of silt. This portion of the sewering arrangements is under the constant supervision of the Canal Authorities. The intercepting sewer is well ventilated and periodically inspected.

The seventh sewer was not diverted at the time of the making of the Manchester Ship Canal, but was made to go into a culvert under the Canal, which opens out on the Mersey side of the Canal embankment, a little to the North of the Weston Point Docks. This sewer and the intercepting sewer which receives the six sewers already referred to, constitute the sewerage system of the Town and Urban District.

Refuse Disposal.—At one time the privy-ashpit, with very few exceptions, represented the only method of dealing with night-soil. Within recent years water-carriage has been insisted upon wherever possible, and whenever structural alterations are necessary. All new house properties of whatever description have water-carriage, and the system has been found to work well. As regards the old privy-ashpits and cesspools, they are slowly disappearing; however, they are still in existence to a considerable extent.

Privy-pits and ashpits are periodically emptied and the contents sold to farmers for manuring land. All this special work is done by the Local Authority, the necessity of employing a contractor being thus avoided. The night-soil is removed during the night, being tipped into large barges, and taken along the old Bridgewater Canal to be delivered to farmers whose property adjoins the Canal.

House Accommodation.—Some years ago, after the completion of the Manchester Canal, a large number of workingmen left the town to seek employment elsewhere, hundreds of houses being thus left vacant. Syndicating the Chemical Industry of the town seemed for a time to exercise a very unfavourable effect, in leading to the migration of workers For a few years, however, an improvement has been visible and is still going on, trade having improved and an additional industry having been established within easy distance of the town. Cottage houses are now letting better and are in demand. For years past there has been very little building going on. This is partly owing to the absence of demand for new houses, and partly to the fact that the new building bye-laws are more onerous than those which preceded them. As a whole the working classes are well and comfortably housed, and the reasonable requirements of occupants

are provided for. Each house, with very few exceptions, has its own water-supply, and where one tap is used by two or more houses, it is within a convenient distance of all of them. There are as a rule, large airy yards in the rear of the houses. Overcrowding is rare, and when it occurs is generally due to temporary causes. The drainage of all cottage property is connected with the general sewerage system. Defects of any kind are promptly dealt with, and in a large number of instances new drains have been laid within recent years.

The Sanitary Inspector, Mr. Percival, furnishes information as to matters coming under his supervision.

Nuisance Abatement.—The number of nuisances discovered or brought to the knowledge of the Inspector was 511. The number of nuisances abated was 492. The number of preliminary notices issued in respect of these nuisances was 157. Several nuisances are often referred to in one notice. A large number of nuisances were owing to various defects in dwelling-houses, defective drains, soil-pipes and gulley traps, obstructed drain sinks, directly connected with drains, insanitary ashpits and privies, defective water-closets, unpaved yards and passages, houses dirty or without proper ventilation, with dilapidated roofs, without proper water-supply, &c., or with stagnant water in the cellars. Other nuisances abated were from accumulation of manure, decayed fruit, fish, &c. Seven smoke nuisances were reported and dealt with.

Overcrowding.—This nuisance occurred in 14 houses, and steps were taken to abate it.

Common Lodging-houses.—These are registered, and have been regularly visited by the Inspector. In no instance has there been cause of complaint. In all 385 visits of inspection were made.

Milkshops and Cowsheds.—There are 36 milkshops, and 12 cowsheds, which have been kept under regular supervision by the Inspector.

Slaughter-houses.—These were inspected 135 times during 1905.

Scavenging.—During 1905, there were 3,476 ash-pit emptyings, and 4,700 tons of refuse were removed. The ash-box emptyings numbered 87,500. Pails were emptied 2,350 times.

SALE

Urban District.

Medical Officer of Health—Dr. Oliver Withers.
Population at Census on April 1st, 1901—12,088.
Estimated Population in middle of 1905—14,000.
Area in acres—2,006.
Birth-rate per 1000 living—22.4.
Death-rate per 1000 living—13.7.
Death-rate from seven principal Zymotic Diseases—1.5.
Deaths under one year to 1000 births—133.

The population of Sale Urban District was 9,644 at the Census in 1891, and 12,088 at the Census in 1901. The increase in the population during the decennium 1891-1901 was thus 2,444, that is 25.3 per cent. The estimate of the population made for the middle of the year 1905 is 14,000—a reasonably low estimate.

In 1905 the number of births registered was 314, and the number of deaths registered was 180. The number of deaths was increased by 12 deaths of residents which took place outside the District, viz. :— 8 in Knutsford Workhouse, 1 in Baguley Sanatorium, 1 in the Manchester Cancer Hospital, 1 in the Royal Infirmary, and 1 in the District of Eccles. Thus there were 192 deaths of persons belonging to the District. The birth-rate is 2.3 below the average in 1895-1904, and the death-rate is 0.5 below the average in the same 10 years.

The number of deaths from the principal zymotic diseases in 1905 was 21, viz. :—1 measles, 5 whooping-cough, 2 diphtheria, 3 fever, and 10 diarrhœa. The zymotic death-rate is about the average in the District. There were 12 deaths from phthisis, 4 from other tubercular diseases, 9 from cancer, 15 from bronchitis, 29 from pneumonia, 4 from alcoholism or cirrhosis of the liver, 3 from premature birth, 18 from heart diseases, 16 from cerebral diseases, 11 from senility, 7 from convulsions, 4 from Bright's disease, 5 from inanition, 8 from accidents and 2 from suicides.

Cases of Infectious Disease notified.—The number of cases of infectious disease notified was 80, viz. :—12 diphtheria, 1 membranous croup, 57 scarlet fever, 3 enteric fever, 1 continued fever, 1 puerperal fever, and 5 erysipelas. Of these 20 were removed to the Isolation Hospital at Baguley, viz. :—2 diphtheria, 17 scarlet fever, 1 enteric fever. Thus only 25 per cent. of the notified cases were isolated in hospital.

Scarlet Fever.—Most of these cases occurred during the last quarter. They were usually of a mild type and not one was fatal.

Enteric Fever.—Of the 3 cases notified one proved fatal, and one was isolated in hospital.

There was also a case reported as continued fever, and 2 deaths were certified as due to continued fever.

Diarrhœa.—There were 12 deaths ascribed to this disease, 9 of those who died being infants under a year old, and the other being a very young child. This is an exceptionally small number, and is due doubtless to the comparative coolness of the autumn months. The diarrhœa death-rate in 1905 was therefore 0.71 per 1,000 living. The diarrhœa death-rate in the District in 1904 was 2.08 per 1,000 living.

Phthisis.—The 12 deaths ascribed to this disease are equal to a death-rate of 0.85 per 1,000 living.

Preventing the Spread of Infectious Disease.—Ordinarily, when a case of infectious disease is reported, the premises are visited, the cause, if possible, is ascertained, and advice is given as to the remedying of insanitary conditions and the best method of preventing the extension of the disease.

Isolation Hospital Accommodation.—Sale, being one of the Authorities forming the Bucklow Joint Hospital District, has excellent hospital provision at Baguley, which is easy of access. The prompt removal of cases, when isolation could not be obtained at home, enabled the Medical Officer of Health to limit the spread of infection as regards scarlet fever and diphtheria.

Water-supply.—This is from the Manchester Corporation reservoirs at Woodhead. The water is good, and generally sufficient in quantity.

Systematic Inspection.—Inspections are made week by week, and insanitary conditions discovered are reported, steps being forthwith taken to remedy them.

Nuisance Abatement.—Among the nuisances dealt with were 40 which were due to defective ash-pits, 23 which were due to obstructed drains, 4 to fowls so kept as to be a nuisance, and 4 to insanitary privies, which were converted into water-closets.

Sale Urban District.

Factories, Workshops, Dairies and Slaughter-houses have been regularly inspected during the year. With one or two exceptions all have been found in a satisfactory condition.

Canal Boats.—In all 129 canal boats have been visited by the Inspector. Of these, 3 boats required painting. The owners did the necessary work, without proceedings being taken against them.

SANDBACH

Urban District.

Medical Officer of Health—Dr. R. Riddell.
Population at Census on April 1st, 1901—5,558.
Estimated Population in middle of 1905—5,558.
Area in acres—2,694.
Birth-rate per 1,000 living—27.5.
Death-rate per 1,000 living—14.3.
Death-rate from seven principal Zymotic Diseases—0.18.
Deaths under one year to 1,000 births—111.

The population of this Urban District was 5,824 at the Census in 1891, and 5,558 at the Census in 1901. Thus during the decennium 1891-1901 there was a decrease in the population of 266. It is estimated that the population in the middle of 1903 did not exceed the enumerated population in 1901.

During 1905 the number of births registered in the District was 153, and the number of deaths registered in the District was 76. To the latter must be added 4 deaths of persons belonging to Sandbach, which took place in the Workhouse at Arclid. Thus the deaths belonging to the District number 80. The birth-rate in 1905 is about 3 in excess of the recent average, and the death-rate in 1905 is just equal to the recent average. Seventeen of those who died were infants under a year old, and 27 were persons 65 years old and upwards.

There was one death due to measles, 1 to epidemic influenza. There were 6 deaths from phthisis, 6 from cancer, 4 from bronchitis, 12 from pneumonia, 4 from premature birth, 14 from heart disease, and 15 from senile decay.

Infectious Disease notified.—The number of cases of infectious disease notified was 18, viz.:—3 diphtheria, 11 scarlet

fever, and 4 enteric fever. These cases were treated at home, and the necessary disinfection was effected in each case.

Isolation Hospital Accommodation.—In the last Annual Report it was stated that the Hospital at Arclid had been improved and enlarged, and was to be reserved for small-pox cases only. Hospital accommodation for other infectious diseases is under consideration, by a combined Committee representing Congleton Rural District, the Borough of Congleton, and the Urban Districts of Alsager and Sandbach. It is proposed to erect a Hospital on a conveniently central site. Application has been made to the Local Government Board for sanction to borrow the money required.

Water-supply.—This is derived from an upland source and treated by Clarke's process. It is very pure, fresh, and soft. The quantity continues to be amply sufficient, not only for Sandbach, but also for the townships supplied through Congleton Rural District Council. The treatment is costly, and requires constant care.

The water is brought from the uplands by means of a 10in. main and a 7in. main. Only one main is used at a time, so that the other may be cleaned out without curtailing in any way the supply of water. New machinery has been obtained, and this and the new 10in. main are now in use with very satisfactory results.

The District contains 1,352 houses—56 of them are in isolated positions away from the pipe-line; 57 have water from their own wells approved by the County Analyst, and 1,229 are supplied by the Council. Owing to the large quantity of oxide of iron in the crude water, it was found that a good deal of sediment deposited in the gravitation main, thus obstructing the flow of water and increasing the friction in working. Under these circumstances the new 10in. main was supplied. It is believed now that the friction will be reduced, and an economy effected in working. The water as supplied averages about 5.2 degrees of hardness.

Houses for the Working Classes are provided in sufficient number. At the close of the year there were 36 uninhabited houses. All the occupied houses are in good repair, and have healthy surroundings. No new houses were erected during the year.

Common Lodging-houses.—There are only 2 in the District, and these are kept clean and thoroughly whitewashed.

One of them is old, and the accommodation therein is not of the best. The other house is a model of cleanliness, and in order. They have been inspected from time to time, and are never overcrowded.

Dairies, &c., have been inspected and found satisfactory. New regulations were made by the Authority in December, 1899, and came in force on February 1st, 1900. Since this date the local dairies have been inspected and registered. In many instances structural defects have been pointed out and remedied.

Most of the milk from farms near Sandbach is sold to the milk factories. The supply for the town is mostly obtained direct from the farmers, and retailed, without being stored in a milk-shop.

The cowsheds in the Urban District are well inspected, and ventilation attended to.

Meat Inspection.—This has been carried out by the Medical Officer of Health and Sanitary Inspector, in consultation with a Local Committee. No unsound meat has been detected or reported during the year.

Slaughter-houses (which are all on private property) have been inspected. They are not of the modern type, yet with care in working, and prompt removal of garbage, they have been kept in order.

Factories and Workshops have, under the new Act, come more directly within the control of the District Council. Generally, the air-space, ventilation, and sanitary arrangements have been found sufficient. Necessary improvements have been made after consultation with His Majesty's Inspector. No new factory or workshop has been erected during the year.

The bakehouses are in good order, and do not communicate with living-rooms or sleeping-rooms. They are all above ground.

Nuisance Abatement.—All the nuisances reported or discovered have had attention, and been dealt with.

Refuse Removal.—Mr. Amos Wood, the Surveyor and Sanitary Inspector, reports that scavenging, as in past years, has been the principal work of his department. Pending the completion of the outfall sewer and disposal works, very few

water-closets have been put in recently, so the work is not diminishing. Two horses and five or six men have been almost wholly employed in this work. From 350 to 400 houses are fitted with pails, and these are emptied every ten days, or at shorter intervals. The remainder of the houses, nearly 1,000, have cesspool privies, the contents of which are dealt with separately. During the year, 4,876 visits were paid to remove ashes, etc., and 1,200 visits were paid to remove nightsoil. From the cesspools, 667 tubs of liquid manure were collected, and sold for £80 6s. 6d. There were 1,725 loads of ashpit refuse carted away. The nightsoil is taken right away from the town and used on the land, which is specially well adapted to receive this manure.

The storage of ashes has always been a difficulty, especially in confined situations. A number of owners have fitted their houses with dust-boxes. This is much better than storing the ashes and house refuse in pits, but as dust-boxes have to be emptied every week, the cost of scavenging is much increased.

The streets are properly scavenged, the channels well brushed, and the gullies cleaned out.

Scheme for Sewerage and Sewage Disposal.—It was mentioned in the last Annual Report that a scheme had been prepared for the District Council by Mr. W. Wyatt, C.E., of Leamington. This scheme is still under the consideration of the Local Government Board. As soon as the Board's approval is obtained, the work will be proceeded with at once.

Canal Boats have been inspected and found duly registered and in a satisfactory condition. The boats usually only come within the District for a short time, being registered either at Runcorn or Stoke. No case of overcrowding was noticed.

TARPORLEY

Urban District.

Medical Officer of Health—Dr. G. A. Kenyon.
Population at Census, April 1st, 1901—2,644.
Estimated Population in middle of 1905—2,620.
Area in acres—6,195.
Birth-rate per 1,000 living—23.3.
Death-rate per 1,000 living—12.6.
Death-rate from seven principal Zymotic Diseases—0.
Deaths under one year to 1,000 births—49.

Tarporley Urban District.

This Urban District consists of Rushton, Eaton, Utkinton, and Tarporley. The area is given as follows:—

	Area in Acres.
Rushton	1,797
Eaton-by-Tarporley	1,344
Utkinton (including Cotebrook) ...	1,889
Tarporley (including Rhuddall Heath)	1,165

The population was 2,702 at the Census in 1891, and 2,644 at the Census in 1901. The decrease in the population during the decennium, 1891-1901, was thus 58—a little more than two per cent. The estimate of the population made for the middle of the year 1905 is less than the Census population.

During 1905, the births registered in the District numbered 61, and the deaths registered in the District numbered 31. To the deaths must be added one in the Workhouse, and one in the County Asylum, thus the deaths of persons belonging to the District were 33. The birth-rate was 3.0 below the average in 1895-1904, and the death-rate was 3.4 below the average in the same ten years.

Only three of those who died were under a year old—a very small proportion.

There were no deaths from any of the zymotic diseases. There was a death from enteritis, one from cancer, and one from premature birth. There were three deaths from phthisis, 2 from bronchitis, 1 from other diseases of the respiratory organs, 3 from alcoholism, or cirrhosis of the liver, and 3 from heart diseases.

Cases of Infectious Disease notified.—There were 10 cases of infectious disease notified, viz.:—1 diphtheria, 5 scarlet fever, 1 enteric fever, and 3 erysipelas. The cases were isolated as far as practicable at home. A school was closed by the Managers for a short time, as a precautionary measure against the spread of scarlet fever.

Inspection.—The Medical Officer of Health visited the District from time to time, to inquire into the causes of the scarlet fever outbreak, and to advise thereon. In May and November he made general inspections of the District, and reported in detail on various sanitary matters of an ordinary character.

Back Yards, &c.—Bye-laws appear to be needed to enforce and regulate the paving of back yards, etc.

Tarporley Urban District.

Water-supply.—The town of Tarporley is well supplied with water from the Liverpool Waterworks. It is a soft water, and great care is taken not to use lead pipes for its distribution in any part of the house service. There are upwards of 300 houses and premises in connection with the mains. In parts of the District are ordinary wells, and other parts are supplied by pipes with water from springs, which are of excellent quality, and afford a good supply to houses within reach of them.

The water supply required for part of the Township of Rushton, comprising 5 farms and 5 cottages, has been provided by a main connected with the Liverpool Waterworks. This work has been done by Sir Philip Egerton, the owner of the property.

Sewerage and Sewage Disposal.—The extension of the sewers and the construction of outfall works have been completed, and are in full working order. Many house connections have been made already, and others are being made.

Removal of Excreta.—The disposal of excreta in Tarporley, as in other parts of the District, is chiefly with ashpit refuse. The combined privies and ashpits are mostly emptied by farmers without difficulty; but in Tarporley there have always been exceptions to this rule, owing to its more urban character.

Report of Surveyor and Inspector.—Mr. Greenway, the Surveyor and Inspector, gives attention to all complaints made, visits to houses complained of, sees to the cleansing of the dirty premises, and the abatement of nuisances. He states that 156 complaints of nuisances were received during the year, that 175 houses, premises, etc., were specially inspected during the year, and that 95 were re-inspected. Twenty orders were issued for sanitary amendment of houses and premises, 12 houses were repaired or cleansed. The drains of 10 houses were put in order.

Dairies, etc.—Ten milk-sellers' premises were inspected during the year, and found to conform to the Regulations made by the District Council.

Slaughter-houses.—There are 2 slaughter-houses in the District, which were regularly inspected.

Factory and Workshop Act.—There is no factory in the District, but there are 13 workshops, including 5 bakehouses, 3 tailor's shops, a plumber's, a printer's, a shoemaker's, a tinsmith's, and a milliner's and dressmaker's. Thirty inspections have been made, no defects were discovered.

WALLASEY

Urban District.

Medical Officer of Health—Dr. A. Craigmile.
Population at Census on April 1st, 1901—53,579.
Estimated Population in middle of 1905—58,500.
Area in acres—3,349.
Birth-rate per 1,000 living—28.3.
Death-rate per 1,000 living—13.2.
Death-rate from seven principal Zymotic Diseases—1.1.
Deaths under one year to 1,000 births—98.

The population of this Urban District was 33,229 at the Census in 1891, and 53,579 at the Census in 1901. The increase of the population during the decennium 1891-1901 was thus 20,350, that is 64.24 per cent.

The return of inhabited houses in this District, as supplied by Mr. J. J. Burnley, the Accountant, is as follows :—

	December 31st.		
	1904.	1905.	Increase.
Poulton-cum-Seacombe ...	4,321	4,394	73
Liscard	6,188	6,385	197
Wallasey	1,075	1,130	55
	11,584	11,909	325

This gives an increase of 325 inhabited houses for the year, making a total of 11,909. At the Census of 1901, the average number of persons per house was 4.97. 11,909, multiplied by 4.97, gives the population at the end of the year as 59,187. At the end of 1904, the population, estimated in the same way, was 57,572. Now it will be presently seen that the natural increase of population for 1905, *i.e.*, the number of births over deaths, was 885. Taking this into account, together with the increase from immigration into the District, it is estimated that the population at the middle of 1905 was 58,500. The Medical Officer of Health thus, instead of adding 1,000 per annum, as he has lately done, has added 1,500. This estimate takes no account of floating population, viz. :—Persons on board ships, flat-boats, etc., in the Wallasey portion of the docks and river. The Register-General estimates the population of Wallasey Urban District, at the middle of 1905 at 62,480. He has simply added about 2,000 per annum to the Census population of 1901, as that was the rate of increase between 1891 and 1901. However, the rate of increase is not now as rapid as it was in the last decennium.

Wallasey Urban District.

It will be observed that the greatest increase of new houses of late, has been at Liscard. This is owing to the development, mainly, of the Stoneby estate.

The number of births registered in the whole District was 1,657, in 1905. The number of deaths registered in the whole District was 748, in 1905. To the gross number of deaths must be added the deaths of 49 residents registered in Public Institutions beyond the District, viz. :—Tranmere Workhouse, Liverpool Hospitals, etc., and there must be deducted the deaths of 25 persons registered in the District, but not belonging thereto. The deaths belonging to the District were, therefore, 772. The birth-rate for 1905 was about 0.6 below the average in 1895-1904, and the death-rate for 1905 was about 3.0 below the average in the same 10 years.

The following meteorological results, obtained through the courtesy of Mr. Plummer, of the Bidston Observatory, show the mean temperature, mean barometer, and the amount of rain-fall in inches, for every month in the year 1905. The mean barometer, as given below, has been reduced to 32 degrees Fahrenheit, and to sea level :—

1905.	Mean Barometer Inches.	Mean Temperature In Degrees F.	Rainfall Amount. Inches.
January ...	30.200	39.7	1.068
February ...	30.133	41.3	1.141
March ...	29.643	44.8	3.382
April ...	29.831	45.3	2.094
May ...	30.136	52.0	0.417
June ...	29.963	59.1	2.172
July ...	30.036	62.1	3.170
August ...	29.845	58.7	3.221
September ...	29.971	54.5	1.403
October ...	30.025	46.4	1.983
November ...	29.661	41.7	3.448
December . .	30.194	42.2	0.512
		Total ...	24.011

The Medical Officer of Health also gives the following interesting particulars of the local rainfall registered, and supplied by Dr. Wm. Bell, of St. George's Mount, New Brighton, which shows that the rainfall in the Wallasey District is even less than at Bidston Hill.

Wallasey Urban District.

Month.	Total depth.	Greatest fall in 24 hours.		Number of days on which .01 or more fell.
	Inches.	Depth.	Date.	
January	1.16	.16	16th	13
February	1.00	.23	6th	13
March	3.26	.38	17th	20
April	2.28	.68	6th	19
May...	.33	.16	31st	5
June	1.72	.51	17th	12
July	2.32	.75	17th	13
August	3.08	.61	2nd	16
September	1.88	.63	9th	15
October	2.76	.50	17th	14
November	3.24	.48	22nd	14
December	.46	.12	27th	8
Total ...	23.49			162

A comparison between the above Table and that for 1904 gives the following results as regards Temperature and Rainfall, the sign + meaning an increase for 1905 and the sign — a decrease for 1905.

	Mean Temperature, In Degrees.	Rainfall. Inches.
January	—0.1	—1.022
February	+3.1	—2.458
March	+4.4	+1.589
April	—2.3	+1.019
May	Nil.	—1.688
June	+2.5	+0.841
July	—0.2	+1.820
August	—0.8	—0.308
September ...	—1.1	—1.379
October	—4.2	+0.499
November ...	—2.5	+1.910
December ...	+2.7	—1.993

It will be noticed that from the end of June to the end of November the average temperature was continuously lower than in 1904.

Details as to the diminished rainfall are clearly put forth above, the whole decrease for the year amounting to 1.170 inches.

During the four hot months, the deaths were, for diarrhœa and enteritis :—

Wallasey Urban District.

	Diarrhœa. 1905.	Enteritis. 1905.	
July... ...	8	0	= 8
August ...	20	2	= 22
September ...	4	1	= 5
October ...	1	1	= 2
	33	4	= 37

out of a total of 47 from these two diseases for the whole year.

The next table gives the mortality (from all causes) under one year, the so-called infant mortality, which is always looked on as an important index to the healthiness and sanitary conditions of a locality.

It also gives the number of deaths under 5 years of age.

Year.	Infants under one year.	Rate of Infant Mortality per cent. of Deaths.	Rate of Infant Mortality per 1,000 Births.	Under 5 Years.
1896	168	27.40	143.3	224
1897	213	28.94	168.3	334
1898	221	28.55	167.5	296
1899	241	30.58	163.2	328
1900	208	24.18	132.6	276
1901	219	28.33	142.7	293
1902	172	22.84	108.9	242
1903	183	23.92	113.5	269
1904	265	30.04	157.9	385
1905	163	21.10	98.97	240

Thus there were 102 less deaths of infants under a year old in 1905 than in 1904, and the rate per 1000 births was lower by about 61 than in 1904.

Details of deaths under one year from 1902, from those diseases most fatal to infants are here given.

	1902.	1903.	1904.	1905.
Diarrhœa	9	23	50	29
Convulsions	15	14	24	9
Bronchitis and Pneumonia ...	31	20	31	15
Enteritis	7	11	9	5
Premature Birth	26	24	32	29
Atrophy and Debility ...	35	38	44	21
Total...	123	130	190	108

Wallasey Urban District.

Deaths from Zymotic Diseases. — The principal zymotic diseases caused 66 deaths in 1905, viz. :—1 measles, 6 scarlet fever, 10 diphtheria or membranous croup, 2 whooping-cough, 8 typhoid fever, and 39 diarrhœa. This compares very favourably with the zymotic mortality of recent years. In 1904 the deaths were 162, in 1903 they were 175, in 1902 they were 67, in 1901 they were 122, and in 1900 they were 65. In 1905 these deaths were equal to 1.1 per 1000 living.

Cases of Infectious Disease notified.—The number of cases of infectious disease notified in 1905 was 533, viz :—64 diphtheria, 1 membranous croup, 348 scarlet fever, 61 enteric fever, 6 puerperal fever, and 53 erysipelas.

Some particulars with reference to these cases, especially showing the localities in which the cases occurred, are shown in the tabular statement below :—

TOWNSHIPS.		Small-pox.	Diphtheria.	Membranous Croup.	Erysipelas.	Scarlatina.	Typhus.	Typhoid.	Puerperal.	Totals.	
Poulton-cum-Seac'mbe — Poulton ..	Under 5.	—	4	—	—	4	—	1	—	9	
	Over 5.	—	2	—	4	15	—	5	—	26	
Poulton-cum-Seac'mbe — Seacombe	Under 5.	—	11	—	1	31	—	6	—	49	
	Over 5.	—	10	—	15	79	—	14	1	119	
Liscard. — Egremont	Under 5	—	2	—	1	9	—	—	—	12	
	Over 5.	—	2	—	7	43	—	12	2	66	
Liscard. — Liscard ...	Under 5.	—	6	1	1	18	—	1	—	27	
	Over 5.	—	6	—	11	73	—	12	1	103	
Liscard. — New Brighton ...	Under 5.	—	5	—	—	17	—	1	—	23	
	Over 5.	—	9	—	7	31	—	6	1	54	
Wallasey	Under 5.	—	4	—	—	7	—	—	—	11	
	Over 5.	—	2	—	5	21	—	3	1	32	
Totals	Uuder 5.	—	32	1	3	86	—	9	—	131	
	Over 5.	—	31	—	49	262	—	52	6	400	533
			*+1		+1†					+2	

* From Wirral Children's Hospital.

† From Birkenhead, patient belonging to Wallasey District.

NOTE.—For the purpose of more defined Localization :—Poulton includes that portion of Poulton-cum-Seacombe Township to the West of Wheatland Lane ; Liscard Township is above divided into Egremont (portion of Liscard between Seacombe and Green Lane) ; Liscard proper, including Liscard Village, Magazines, and on to Magazine Lane and Mount Pleasant, and New Brighton, including rest of Liscard Township.

Measles not being notifiable the number of cases is not known, but there seems to have been practically no prevalence of the disease during 1905. No schools were closed on account of measles during the year. In 1904 there were 33 deaths from the

disease, and 8 schools were closed on account of measles and whooping-cough combined.

Whooping-cough caused only two deaths in 1905, as compared with 42 in 1904.

Diphtheria and Membranous Croup.—As already stated there were 64 cases notified as diphtheria, and 1 notified as membranous croup. As 7 deaths were registered from diphtheria the case-mortality was not quite equal to 1 in 7. This record compares favourably with that of 1904, when 55 cases were notified, 12 of which proved fatal.

Scarlet Fever caused 6 deaths in 1905, which are equal to a mortality of 0.1 per 1,000 living. Though the number of fatal cases is small, the disease prevailed extensively, as indicated by the notification record. The mortality was equal to 1.7 of the cases notified—a decidedly low rate. A few of the cases were of an extremely virulent type, and some of the patients suffered from prolonged discharges from the nose and ears, necessitating a long period of detention in Hospital. Several of the cases were, however, so mild, that the disease was overlooked by the parents, and not suspected till other children belonging to the same household had become infected. In this way, undetected cases were, from time to time, permitted to attend Public Elementary Schools, even when "peeling" was going on. A circular, describing the risk of allowing infectious scholars to attend school, and warning teachers of the danger of overlooked cases, was sent widely to parents and School Authorities. Of course the circular detailed the symptoms to be looked for.

Enteric or Typhoid Fever.—The localities in which the 61 cases occurred, and the months in which notifications were received, are indicated in tabular form as follows:—

Townships.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	Totals.
Poulton-cum-Seacombe:													
Poulton	—	—	—	—	—	1	1	—	—	2	1	1	6
Seacombe ...	—	—	—	—	1	—	—	3	10	3	3	—	20
Liscard:													
Egremont ...	—	1	1	—	—	3	1	3	—	—	—	3	12
Liscard (Proper)	1	—	1	2	—	—	—	1	3	2	3	—	13
New Brighton ...	—	—	—	1	—	—	—	1	2	1	2	—	7
Wallasey	—	—	—	1	—	—	—	—	—	1	1	—	3
Totals	1	1	2	4	1	4	2	8	15	9	10	4	61

Wallasey Urban District.

The 8 deaths recorded are equal to a death-rate of 0.13 per 1,000 living, the same rate as in 1904.

It is obvious that the District is reaping the advantage of the extensive re-construction of sewers carried out in late years, and which is still in progress.

The number of cases of enteric fever, and the number of deaths since 1890, together with the death-rate per 1000, appear in the following tabular statement :—

Year.	Deaths.	Rate per 1,000.	Notified cases.
1889 ...	12 ...	0.36 ...	—
1890 ...	9 ...	0.26 ...	42
1891 ...	20 ...	0.59 ...	77
1892 ...	20 ...	0.57 ...	62
1893 ...	23 ...	0.64 ...	132
1894 ...	13 ...	0.35 ...	89
1895 ...	8 ...	0.20 ...	67
1896 ...	10 ...	0.24 ...	112
1897 ...	9 ...	0.20 ...	93
1898 ...	9 ...	0.19 ...	87
1899 ...	11 ...	0.23 ...	132
1900 ...	17 ...	0.32 ...	163
1901 ...	31 ...	0.57 ...	257
1902 ...	12 ...	0.21 ...	64
1903 ...	5 ...	0.08 ...	47
1904 ...	7 ...	0.12 ...	39

These figures show to what an extent enteric fever is diminishing in the District, and prove that the efforts to cope with enteric fever have been successful in a great measure.

Diarrhœa was the cause of 39 deaths, 28 of those who died being infants under a year old, and 4 others being between 1 year and 5 years old. The term "diarrhœa" now includes all deaths registered as diarrhœa, zymotic diarrhœa, zymotic enteritis, and dysentery. There were also 17 deaths registered as due to enteritis, 9 being of infants under a year old, and 4 being of children between 1 year and 5 years old. It is probable that most of these were also cases of diarrhœa. Of course it is not meant that enteritis should be excluded as a cause of death, but that the use of the word should be limited to cases not looked on as zymotic or epidemic diarrhœa. The 39 deaths recorded in 1905 are equal to a death-rate of 0.64 per 1,000 living. The diarrhœa death-rate in 1904 was 1.08 per 1,000 living. Of the deaths from diarrhœa in 1905, 32 occurred in June, August, and September. It will be at once seen that the deaths from diarrhœa were much ewer than in recent years. The meteorological results already

given show that during July, August, September, October, and November, the temperature was persistently lower than in the corresponding months of 1904, while in July there was very abundant rain (3.170 inches) and also in August (3.221 inches) and a fair amount rain of in September and October. The two great pre-disposing causes of zymotic diarrhœa are, heat, and drought, and the low diarrhœa mortality in 1905 is doubtless due to the lower temperature, and abundant rain in July, August, and September. When July proves a very hot and dry month diarrhœa among infants commences, and seems to go on even when conditions are not very favourable to it in August.

Diarrhœa, etc., in Oakdale and Wheatland Lane.—For many years diarrhœa and enteritis prevailed extensively in Oakdale and Wheatland Lane. In 1905 only 7 deaths from these diseases occurred in the two districts. The decrease of these diseases since 1898 in these two Districts is shown below. There is no doubt it is due to the re-drainage of these Districts, and the sanitary improvements therein which have been made.

	Total. 1898.	Total. 1899.	Total. 1900.	Total. 1901.	Total. 1902.	Total. 1903.	Total. 1904.	Total. 1905.
	85	82	49	54	24	48	71	47
Deaths from Diarrhœa and Enteritis in Oakdale and Wheatland Lane Districts.	29	13	16	15	4	14	22	7

The Care and Feeding of Infants.—The question of providing premises for the preparation of sterilised and humanised milk for infants was carefully considered by the Health Committee; a deputation visited the chief depôt in Liverpool, and saw all the details of the work carried on there. They were most favourably impressed by the Liverpool system, but it was found the expense for this District would be great, especially as, in many instances, it is not really the poorest classes who avail themselves of this milk supply, and as one depôt would probably not suffice for the whole District, but the matter is still under consideration.

Report of Female Sanitary Inspector.—Miss Birrell, the Female Sanitary Inspector, has again done much good work. Although her report deals with various other matters, it is convenient to introduce it here, as so many of her duties have to do with the care and treatment of infants. It will be seen that it contains many interesting details of her numerous visits, and the Medical Officer of Health looks to see excellent results therefrom. Her report is as follows :—

Wallasey Urban District.

I beg to report that the greater portion of the work of the Female Inspector has consisted, as in preceding years, of household visitation amongst the poorer working classes. Each street is visited every three or four months, when possible, and each family is seen in their own house or room.

On the whole such visits seem to be increasingly appreciated, and advice is frequently asked on many subjects, such as sick nursing, cookery, needlework, etc.

By such means the confidence of the mothers is won, and it is found that other advice, regarding personal and household cleanliness, the value of fresh air, and simple directions for infant feeding, is more readily followed.

"Special attention is given to those families in which habits of intemperance and indolence are found; improvement in such cases depends on constant supervision, and unfortunately this work is hampered by frequent removals on the part of these families. Whenever possible, they are followed up and re-visited. A distinct improvement in the cleanliness of the bed rooms, and especially of the bedding, has been observed throughout the District, so much so, that this year no bedding has been found in such a condition as to warrant destruction.

"The health and general well-being of the children is always enquired into during the ordinary household visitations; fewer children have been found in a dirty or neglected condition, although there is still reason for suspicion that many are washed and cleaned immediately prior to the Inspector's visit.

"Any cases of persistent neglect are reported to the Society for the Prevention of Cruelty to Children, but such cases are fortunately rare.

"Much carelessness is still apparent regarding infant feeding. Even where the infant is fed naturally, it is still often found that farinaceous foods are given in addition, and in cases where the child is entirely artificially fed, various patent foods form a large part of the dietary of even very young children. Verbal instructions are always given in such cases, but unfortunately there exists no means of enforcing such instructions. Where the advice has been acted on improvement in every case has been the result.

"A memorandum of simple instructions dealing with this matter, and also pointing out the importance of per-

sonal and household cleanliness in warding off disease, was distributed amongst the poorer classes at the commencement of the summer with good results.

"During the months when infantile diarrhœa is so prevalent the use of sterilised humanised milk is recommended, and the mode of preparation shown to any desirous of adopting this method of feeding. In every case where it was used encouraging results were obtained. As in preceding years, many filthy long tubes were found in infants' feeding bottles; this means of feeding is still popular with the more careless class of mothers, although many have been induced to adopt the boat-shaped bottle. Where sick persons are discovered who are not receiving medical aid, their friends are advised to seek such treatment. In three cases where suitable attention could not be obtained at their homes, the patients were influenced to apply for admission to hospital. Two cases were transferred to the Workhouse Authorities; one that of a mentally defective woman who was living under very filthy conditions, and the other that of a paralysed old woman in somewhat similar condition.

"Structural, sanitary, and other defects, discovered, in the course of household visitation are referred to the departments dealing with such matters.

"During the summer and autumn enquiry visits were paid to houses at which fatal cases of infantile diarrhœa had occurred, and in every instance the method of feeding was found to be incorrect in some particular. The following summary shows the age and method of feeding at time of death."

FATAL CASES OF INFANTILE DIARRHŒA VISITED, 29

AGE AT DEATH.

Under 12 months.	Between 1 to 2 years.	Between 2 to 3 years.
26	3	0

METHOD OF FEEDING AT TIME OF DEATH.

Entirely breast-fed.	Partly breast-fed—Partly bottle.	Entirely bottle-fed.
0	3	25

(The parents in one case had left the District, and no particulars were obtainable.)

Reconstruction of Main Sewer.—This important work was begun in January, 1898. Starting at Leasowe Road, from the junction with the large marginal sewer, the work was continued through Wallasey Village to Grove Road, up Grove Road and Hose-side, and also through Warren Drive on to Portland Street. The year 1899 was an unusually active one in connection with sewerage work, and witnessed the completion of three extensive contracts, involving the expenditure of about £20,000. In 1900 excellent reconstruction work was done in the lower portion of New Brighton, where the condition of the sewers was found to be very bad indeed. Equally good reconstruction work is being carried on in connection with the Higher Parade, New Brighton. Owing to the occurrence of typhoid fever there, and to the complaints that the drains were blocked in several houses, the Sanitary Department asked for and obtained power, to uncover and examine the sewer draining all these houses. The drains of the houses do not run out into the sewer in Virginia Road, but all enter a sewer that runs along the back yards of the row, and finally goes under a house in Victoria Road, and empties into the Victoria Road sewer. This sewer receiving all these drains, was found to be so faulty and defective that it was completely blocked, and hence the sewage was dammed back and overflowing from various gullies in these back yards. After various discussions by the Health Committee, and negotiations carried on between the Clerk and the Solicitor the Inspector, and the agents of the owner, the matter was amicably arranged, the owner agreeing to drain each house separately into Virginia Road. In 1901 the work done included the laying of the new outfall sewer from Dock Road to Oakdale, the laying of new sewers in Wheatland Lane and in St. Paul's Road, Seacombe, certain relief sewers, and the reconstruction of many defective sewers. In the Annual Reports for 1900, 1901, 1902, 1903, and 1904, were lists of the most important streets, etc., in which sewers have been constructed or re-constructed.

Mr. Travers, the Engineer and Surveyor, has supplied the following Report of the work done by him in connection with the sewers and their re-construction:—

> "*Leasowe Road Sewer*—The first section of the scheme for the sewering of the low-lying portion of Wallasey, on the hydro-pneumatic system as sanctioned by the Local Government Board in October, 1903, has now been completed, and is working remarkably well. The drains from several houses have been connected up to the sewer, and it is expected that the majority of the remaining properties will be connected up during the year 1906.

"The tedious work of repairing and re-inverting the main brick sewer along King Street and Brighton Street has been proceeding during the year, a length of about 430 yards between Rice Lane and Littledale Road being completed.

"Under a special agreement with the Wirral Railway Company, a 12-inch diameter surface water drain has been laid along Green Lane, Wallasey, from the water course in the railway cutting, as far as Stanley Avenue. This is in anticipation of the time when the separate system, as applied to this low-lying part of the District is extended.

"A new sewer with manholes complete has been laid along the intended new street off Poulton Road, adjacent to the site reserved for new Council Schools.

"The washing and disinfecting of the whole of the manholes in the District has again been attended to with the best of results, because, during the past year, only 9 complaints of smells, etc., were received, and of these 7 were found to have been caused by gullies which had become temporarily untrapped.

"A number of new manholes and flushing chambers have been built, and ventilating shafts erected (including 8 street columns) and a large number of additional street gullies have been fixed in various parts of the District.

"Defective sewers in the following streets and passages have been reconstructed:—

"Back King Street, between Burnaby Street and Union Street.

"Ball Avenue (Passage off South side).

"Brotherton Street (Passage rear of East side).

"Burnaby Street.

"Egerton Street (Passage at rear of 32 to 38 and passage leading thereto).

"Harrowby Road (Portion of).

"Harrowby Road (Passage off South side).

"Harrowby Road (Passage off North side).

"Limekiln Lane (Passage off West side).

"Passage between Union Street and Burnaby Street.

"Passage rear of East side of Poplar Terrace and passage leading thereto.

"Passage between Poplar Terrace and Sandfield Terrace and leading thereto.

"Passage rear of West side of Sandfield Terrace.
"Passage rear of 155 to 163, Seabank Road.
"Passage between Stanley Terrace and Cyprus Terrace.
"Passage rear of 17 to 23, Sandfield Road.
"Passage between Prescot Street and Meadow Street.
"Peter Street.
"Peter Street (Passage East side).
"Platt Street (Passage off West side at rear of 81 to 87, Brighton Street).
"Poplar Terrace.
"Prescot Street (portion of).
"Rappart Road (Passage between rear of South side and "cross passages leading thereto).
"Rake Lane, between Halsbury Road and Penkett Road.
"Sandfield Road.
"Stanley Street (Passage rear of West side and cross passages).
"Stanley Street (Passage rear of East side).
"Sutton Road (Passage West side).
"Victoria Road, Seacombe (Passage adjacent to Stanley "Arms Hotel).
"Wheatland Lane (Passage at rear of Hickman's "Buildings)."

The Sanitary Officers of the Health Department have, in connection with the notification of Typhoid Fever, supervised during the past year the reconstruction of the drainage systems (partial or entire) at the following houses:—

9, Oakdale Road, Seacombe.
14, Greenfield Street, Liscard.
2, Lily Grove, Seacombe.
3, do. do.
7, do. do.
5, Edgmond Street, Seacombe.
12, do. do.
14, do. do.
40, Falkland Road, Egremont.
3, Stringhey Road, Egremont.
5, do. do.
15, Green Lane, Egremont
"Riversdale," Falkland Road, Egremont.
St. Barnabas' Home, Montpellier Crescent, New Brighton.

Wallasey Urban District.

Drainage reconstruction (partial or entire) has also taken place at the following houses where Diphtheria has been notified :—

22, Gladstone Road, Seacombe.
5, Parry Street, Seacombe.
25, Conway Street, Liscard.
13, Walmsley Street, Egremont.
15, do. do.
141, Brighton Street, Seacombe.
38, Kenilworth Road, Seacombe.
6, Platt Street, Seacombe.
45, Egerton Street, New Brighton.

Isolation Hospital Accommodation is provided at the Hospital in Mill Lane, and (for small-pox) at the Hospital in Leasowe Road. The small-pox Hospital was not required in 1905. The number of cases admitted in Mill Lane Hospital, in the nine years, 1897-1905, is given below, together with full particulars of the nature of the cases treated in 1905, and the localities from which they were derived.

Year	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.
Admission	171	163	191	175	246	294	397	239	328

TOWNSHIPS.	Year.	Small-pox.	Diphtheria.	Membranous Croup.	Erysipelas.	Scarlatina.	Typhus.	Typhoid.	Puerperal.	Other Diseases.	Totals.
Poult'n-cum-S'combe — Poulton	Under 5	—	1A	—	—	12	—	—	—	—	13
	Over 5	—	6	—	—	2	—	8A	—	—	16
Poult'n-cum-S'combe — Seacombe	Under 5	—	8A	—	—	15A	—	5A	—	—	28
	Over 5	—	6C	—	3	64	—	13A	—	1	87
Liscard — Egremont	Under 5	—	—	—	—	7	—	—	—	—	7
	Over 5	—	2	—	1A	31	—	8B	—	—	42
Liscard — Liscard	Under 5	—	3	—	—	8B	—	2	—	—	13
	Over 5	—	5	—	1	46	—	6C	—	1	59
Liscard — New Brighton	Under 5	—	1	—	—	8	—	1	—	—	10
	Over 5	—	9	—	—	17	—	4	—	—	30
Wallasey	Under 5	—	4	—	—	4	—	—	—	—	8
	Over 5	—	—	—	—	13	—	1	—	1	15
Totals	Under 5	—	17	—	0	54	—	8	—	—	79
	Over 5	—	28	—	5	173	—	40	—	3	249
										Total ...	328

NOTE.—A, 1 died; B, 2 died; C, 3 died.

NOTE.—For the purpose of more defined Localisation :—Poulton includes that portion of Poulton-cum-Seacombe Township to the West of Wheatland Lane. Liscard Township is above divided into Egremont (portion of Liscard between Seacombe and Green Lane). Liscard Proper, including Liscard Village, Magazines, and on to Magazine Lane and Mount Pleasant, and New Brighton, including rest of Liscard Township.

Wallasey Urban District.

It will be seen from the Tables above that more cases were admitted into Hospital than in any previous year, with the single exception of 1903, when 397 were admitted. Previous to that year the Mill Lane Hospital had been so overcrowded that it was found necessary to use North Meade House as an Auxiliary Hospital, and the experience gathered in 1902—1904 led the Committee to recommend the construction of an extra pavilion at Mill Lane. This was commenced in 1904, and formally opened on June 30th, 1905, and an opportunity was given to the ratepayers to see the accommodation provided by the District Council for infectious patients. At that time the number of cases in Hospital was small, and there was no immediate demand for the new pavilion, but in August the cases of scarlet fever began to increase rapidly, and on August 29th the pavilion received its first patients. The number of cases so increased that, on November 21st, many scarlet fever convalescents were transferred to North Meade House, where they had plenty of fresh air and space, and were prevented from mixing with fresh cases of acute disease—a matter of considerable importance. The new pavilion contains 10 beds in the ward for males, and 10 beds in the ward for females, with a day-room for each ward, in which the children can play who are able to get up. The pavilion was designed by Mr. W. H. Travers, the District Surveyor, and is admirably equipped in all respects. The accommodation now afforded at Mill Lane is as follows :—

Pavilion	No. I.	10 beds.			
do.	No. II.	12 beds,	with 2	convalescent	rooms.
do.	No. III.	24	do.	do.	do.
do.	No. IV.	20	do.	do.	do.

in all, 66—but as many of the patients are children, it is easy to increase the accommodation to 80 beds—including cots.

The acquisition, some time since, of a large extent of extra ground for hospital extension has been amply justified. The Special Hospital, in Leasowe Road, used for small-pox cases only, is worked from Mill Lane Hospital, nurses being sent there as required. A caretaker always sleeps there when the hospital is in use, and when it is closed other employment is found for him.

Return Cases of Scarlet Fever.—During the year 1905, one return case of scarlet fever was admitted to Mill Lane. The first patient—an adult—went out quite well—free from peeling and free from any discharge from nose or ears, but in a week's time, one of his children contracted the fever. In addition to this case, two families were infected by the return in each case of a member of the family from hospital, and in each of these two cases, the infection seems to have been caused by a nasal discharge.

To prevent such return cases, every possible precaution is taken, before the discharge of a patient from hospital, both as to complete disinfection of the patient, and all clothing, but so subtle is the infective power of this disease, that even after a prolonged stay in Hospital, now and then return cases will occur, when it may be quite impossible to find out what has caused it. As an additional precaution, the following slip is given to all parents or guardians when a patient is discharged :—

WALLASEY URBAN DISTRICT COUNCIL

MILL LANE INFECTIOUS HOSPITAL.

NOTICE.

Every possible precaution is taken to ensure that each patient is free from infection before being discharged from Hospital. In the case of SCARLET FEVER, however, it is impossible to be absolutely certain that this is the case, as the infection is considered to remain, in some cases, in the nose and air passages, and is best got rid of by change of air away from the Hospital.

It is strongly recommended that patients after being discharged should keep apart from other children as far as possible for at least a week. During this time, children who have been at Hospital, should not be allowed to sleep with other children, or to kiss them. They should spend as much ime as possible in the open air, if the weather is not cold.

Convalescent Scarlet Fever Patients SHOULD NOT ATTEND SCHOOL for at least a fortnight after leaving the Hospital.

Should there be any return of running or discharge from the nose or ears, especially the former, in a person recently discharged from Hospital, the patient should be isolated and a doctor called in.

By Order of the

HOSPITAL COMMITTEE.

December, 1905.

The matron, Miss Malcolm, with three Sisters and an efficient staff of Nurses, carried on successfully the arduous work of nursing the large number of patients admitted during the year. Nurse Hardy, who had been in charge of Leasowe Road Hospital, was sent down to North Meade House to act as charge nurse there.

During 1905. two of the nurses contracted typhoid fever ; one had an extremely severe attack, but fortunately recovered

while the other had a very mild attack. The nurses who go into the typhoid wards for the first time are carefully instructed in all details of their own personal safety, but in spite of every facility being afforded them against catching infection, they do not always escape. The same nurse who had the very severe attack of typhoid, had also diphtheria in an aggravated form in the early part of the year.

Flushing Sewers and House Drains.—The flushing of public sewers is in the hands of the Surveyor and Engineer's staff. An enormous flushing tank (holding 1,800 gallons, and with a 12in. outlet) was procured for the purpose, and this began systematic work early in 1898. Three separate gangs are employed for flushing the sewers and back passages. A tank holding 500 gallons is used for the branch sewers, and where the tanks are inapplicable (as in back passages, etc.), hose-piping is used. Quite independent of these are the three gangs entrusted with the flushing of house drains, belonging to the Sanitary Department. These gangs were constantly occupied throughout the year, and the drains, etc., of each house in the District have been flushed at least twice. Each gang has been provided with a set of Cooper's Patent Suction Pumps, and thus, many drains found choked are cleared, without the ground having to be opened. During the summer, disinfectants were freely used in connection with this work. The flushers reported many defects, as regards sanitary fittings, on premises visited, which were dealt with in the usual way. The flushing of drains at houses where cases of infectious disease are notified, receives special attention. All the large schools are also specially visited by a flushing gang.

Unfortunately, the limited supply of water prevents these gangs from carrying out their work in a perfectly satisfactory manner.

A more abundant supply of water, either fresh or salt is much needed, and measures to obtain this have been taken.

Sewer Ventilators.—The system of ventilating sewers by means of shafts attached to buildings, and the closing of street surface ventilators, has been extended, wherever circumstances rendered it advisable; and at the summits of several main sewers tall ventilating columns have been erected.

Refuse Removal.—On July 1st, 1897, the Health Committee began to undertake the collection of nightsoil with their own staff of men, horses, and carts. This Department of sanitary work is now being carried on smoothly and effectively, in marked

contrast to the lax methods followed by contractors of late years. These gave rise to numerous and well-founded complaints, as to full ashpits, such complaints have practically ceased.

In many of the new houses, and also in many old ones, covered dustbins have been substituted for ash-pits. These are a great improvement. They are emptied weekly, on Fridays. As they are scattered all over the District, a good deal of extra trouble is entailed in dust collection. However, as the improved receptacles become more general they will save work, being more easily emptied. They have handles by which two men can carry them to the cart, and empty the contents therein at once; and thus is avoided the emptying on the road of foul material, till the cart comes round to pick it up. The noise made by barrows and shovelling is also done away with. A revolution in the old system of refuse removal is thus being quietly effected. The new method is, of course, much more in accordance with modern sanitary ideas, preventing accumulations of refuse remaining any length of time in close proximity to houses. The bins only cost a few shillings apiece, and any householder can do away with the ash pit nuisance altogether by substituting a covered dust-bin, which will be emptied by the Council's men.

For schools and public institutions, as well as for private houses, the use of covered dust-bins, emptied weekly, will be found a great advantage.

Trade-refuse Removal.—Arrangements are made for the removal during the summer of all offal, etc., from butchers' premises, and of all vegetable and animal trade-refuse from hotels, dining-rooms, large lodging-houses, etc. Each occupier has to provide a galvanised iron bin, with close-fitting cover, and then give notice to the Authority, who will have the bin emptied weekly. Samples of bins, with other approved sanitary fittings, are on view at the office of the Sanitary Department.

The Destructor for the cremation of refuse, situate in Gorsey Lane, which was opened in June, 1895, was added to in 1897; the six cells being supplemented by six more. The power developed by the heat generated in the destructor cells is used for the production of electricity to light the premises, and also for turning a mill to grind the clinkers and make mortar, which is sold to builders. The stabling and other buildings for the plant used in the collection of night-soil, etc., were completed satisfactorily during 1897.

Factories and Workshops.—There are at present on the Register 186 workshops' and there is only one factory. To

these 442 visits of inspection were paid. At 15 premises defects were discovered and written notices were served on the owners to remedy them. There were also 38 inspections of out-workers' premises. Two cases of infectious disease were notified on premises where there was a workshop.

Vaccination Returns.—These refer to 1,739 births registered during the year ending June 30th, 1905. The particulars are supplied by the Vaccination Officer :—

Successfully Vaccinated	1,509
Died before Vaccination	139
Insusceptible	1
Conscientious Objections	6
Postponed by Medical Certificate	30
Removed, Traced, and Vaccination Officers Notified	9
Not found, or removed to places unknown	43
Not vaccinated, or otherwise accounted for	2
Total Births Registered	1,739

This shows that only 2.5 of the children born escaped vaccination requirements. In the year ending June 30th, 1901, 2.1 per cent escaped ; in the year ending June 30th, 1902, 2.5 per cent. escaped ; in the year ending June 30th, 1903, 3.0 per cent. escaped ; and in the year ending June 30th, 1904, 1.9 per cent. escaped. These are very satisfactory records, and show how efficiently the new Vaccination Act has been carried out in Wallasey District. It will be observed that only 6 persons received exemption under the Conscience Clause.

Water-supply.—Particulars of the amount of water pumped, and its distribution are supplied by Mr. J. H. Crowther, the Gas and Water Engineer. The average quantity used per head per day, in 1905, was 33.90 gallons. It was divided as follows :—

Supplied by Meter	6.73 galls.
Supplied to Shipping	.18 „
Watering Streets and Roadmaking	.46 „
Flushing Sewers by Hose and Cart	.38 „
Domestic and other purposes, including Drinking Fountains	26.15 „

The entire volume of water supplied in 1905 was 699,103,952 gallons, made up as follows :—

From Wells at Liscard ...	537,407,952 galls.
From Vyrnwy	161,696,000 „
Average supplied per day ...	1,915,353 galls.

Wallasey Urban District.

The quantity of water used for flushing sewers and drains during the year was 7,747,484 gallons.

It was mentioned in the last annual Report that the supply of Vyrnwy water commenced on October 10th, 1903. Sometime since, owing to the old Poulton wells, Nos. 1 and 2, having become impregnated with too large a proportion of salt, it was felt that it was not safe to depend entirely on the Sea-view Road well. After long and protracted consideration of a water-supply, it was finally decided not to seek an independent source, but to apply to Liverpool to provide Vyrnwy water. The result of this was that a pipe line was laid from near Norton Tower, in the Delamere district, from the Liverpool main line.

Sale of Food and Drugs Acts.—There were 98 samples of various foods, &c., taken during 1905, and submitted to the County Analyst for analysis. Particulars are as follows :—

Name of Sample.	No. of Samples.	No. of Samples certified as Adulterated.
Brandy	2	—
Butter	22	—
Cheese	2	—
Coffee	6	1
Lard	1	—
Margarine ...	10	—
Milk	54	1
Pepper	1	—
Totals ...	98	2

Two prosecutions were undertaken, viz. :—

1 for selling coffee, adulterated with 20 per cent. of chicory—Fined 10/- together with 14/6 costs. 1 for selling milk adulterated with 2 per cent. of water—Fined 20/- together with 14/6 costs.

The Chief Sanitary Inspector, Mr. H. C. Bascombe, furnishes information on matters coming under his supervision.

Abatement of Nuisances.—The number of notices issued for the abatement of nuisances in 1905 was 1411. In many instances a notice referred to several distinct nuisances. The abatement of many nuisances was also obtained without the serving of formal notices. The nuisances abated were the result of insufficient drains, defective drains, choked drains, broken water fittings, no water supply or insufficient supply, house drains directly connected, waste pipes directly connected, waste pipes untrapped or badly arranged, soil pipes not ventilated or ill-ventilated, rain

pipes directly connected, defective rain conductors or roofs, defective traps or channelling, offensive accumulations, defective ashpits, privies and water-closets, defective cisterns, offensive ponds, yards lodging foul water, damp walls, dirty or overcrowded houses, animals so kept as to be a nuisance, etc. Houses with defective or dangerous floors, staircases or walls, were also dealt with, as well as rooms insufficiently lighted and ventilated. Three smoke nuisances were noted and dealt with—Each notice served has, besides describing the cause of the nuisance complained of, specified the sanitary work required to abate the same, in the most satisfactory and economical manner. Particular care has been taken not to put owners or occupiers to unnecessary expense.

Nuisances caused by Occupiers.—Many notices have this year been served upon the occupiers of premises to abate nuisances caused by neglect, and to keep the gullies and sanitary conveniences clean and in good order.

House-to-House Inspections were proceeded with during 1905, as time permitted, and thus many defects were discovered and improvements effected.

As in previous years a house-to-house inspection was made of the premises on the Lower Parade, prior to the Easter holidays, the whole of the Staff assisting in this special work. Several defective conditions were found to exist, for the remedying of which the usual steps were taken, and were effective.

Drain Testing.—A considerable portion of the Inspector's time is taken up in testing house drains and fittings, and according to his experience the value of such testing cannot be over estimated. He makes use of the usual smoke-testing machine or the so-called rockets. However, he points out that it is quite possible for serious defects to exist, and yet not be discovered by any smoke test. This may occur when the drains are at any considerable depth, or where the ground above them is impervious. In a few cases the hydraulic test was applied.

Disinfection.—Infected houses or rooms have been disinfected thoroughly with sulphur fumes, in the usual way, or with formic aldehyde gas by means of Sharratt's apparatus, which has been found to work well The objectionable odour, noticeable in rooms for so long after disinfection by sulphur fumes, is avoided by the use of formic aldehyde. At the request of the Medical Attendant, disinfection of rooms and clothing has followed in connection with many cases of phthisis. The steam disinfector has been in constant use for the disinfection of bedding and clothing. A van is employed for removing infected articles, and another for returning the articles after disinfection.

Wallasey Urban District.

In all 6018 articles of clothing, &c., and 495 beds and mattresses were dealt with. There were 535 rooms disinfected.

Various articles of bedding, clothing, &c., so foul, or in such a bad condition as to render them unfit for further use, were destroyed, and new goods supplied in lieu thereof.

Disinfection of Library Books.—Intimation has for some time been sent to the Chief Librarian of the Free Public Library, notifying him the addresses at which cases of infectious disease have occurred; but hitherto there has been a difficulty in satisfactorily disinfecting books, belonging to the Free Library or other Libraries, found in infected houses. However, during 1900, the Chief Inspector had erected at his offices a special chamber, in which infected books have been since disinfected by formic aldehyde. Perforated metal shelves are fixed across the chamber, on which the books are arranged, so as to allow the gas to circulate freely through and around them. To facilitate disinfection the temperature of the chamber is raised to 52 degrees F.

Dairies, Cowsheds and Milkshops.—In accord with the regulations made by the District Council under the Dairies, Cowsheds, and Milkshops Order, it is required that 800 cubic feet of air space be allowed for each cow. There are now on the register 17 cowkeepers and 106 dairymen or purveyors of milk, occupying in the aggregate 34 cowsheds and 110 dairies, milk-shops and milkstores. One cowkeeper and 20 purveyors of milk discontinued business during 1905, and applications were received from 1 cowkeeper and 25 purveyors of milk to be registered.

In all cases of new registrations, the premises proposed to be utilised have been visited, in order to see that they were suitable for the purpose intended.

During 1905, there were 426 visits paid to cowsheds and 398 visits to milk-shops and dairies.

Circulars have been periodically issued to all cowkeepers and purveyors of milk, reminding them of the regulations respecting lime-washing, lighting, ventilation, cleansing, drainage, water-supply, etc. In no case has it been found necessary to resort to legal proceedings, to enforce the regulations made by the Council under the Dairies and Cowsheds Order, with respect to these trades.

The regulations require that 800 feet of air space shall be provided for each cow.

Uusound Meat, &c.—As usual, a large amount of meat has been seized at the Foreign Animals' Wharf, Wallasey, and Alfred Docks. The entire quantity seized was as follows :—

Beef	6406 lbs.
Mutton	2582 „
Veal	11942 „
Offal	36891 „
Total seized at Foreign Animals' Wharf and destroyed	57821 lbs.

The butchers' and fish and poultry shops have been visited once in each week, and the contents thereof examined. 1,400 lbs. of meat, etc., have been removed and destroyed in connection with this inspection.

Visits of inspection (to the number of 1,018) have been paid to private slaughter-houses, and 8029 lbs. of meat, etc., have been removed and destroyed, in connection with this inspection.

The details of the meat, etc., dealt with are as follows :—

Beef	5054 lbs.
Mutton	311 „
Pork	1418 „
Offal	1246 „
	8029 lbs.

The contents of hawkers' carts and baskets have also been regularly inspected, but no unsound food stuff, has been found therein.

In a number of cases the owners of fish carts have been cautioned as to depositing fish offal on the public highways.

Offensive Trades.—The premises used for knackering, and other offensive trades in the neighbourhood of Havelock Street, Seacombe, have been kept under constant supervision during the year. The usual limewashing and cleansing have been carried out in a satisfactory manner.

Canal Boats.—Three Inspectors now devote a portion of their time to inspecting canal boats. Visits are paid at least once a week to the Great Float (north side), and the Wallasey and Alfred Docks and entrances. The number of boats inspected in 1905 was 331. The number in 1904 was 313, the number in 1903 was 320, the number in 1902 was 231, and the number in 1901 was 225.

The general cleanliness of the boats has been well maintained, the strict and systematic supervision exercised over the past few years being responsible in a large measure for this satisfactory condition.

In 25 instances the boats did not comply with the requirements of the Canal Boats Acts, and the regulations made thereunder. In 3 cases the master of the boat failed to produce a certificate of registration. In 9 cases the boats were not properly lettered, marked, and numbered. In 12 cases the cabins required re-painting. In 1 case no water cask was provided. Notices were served on the owners of boats, on board of which infringements of the Acts or regulations were noticed, and the defects specified were remedied, without it being necessary to take legal proceedings.

WILMSLOW

Urban District.

Medical Officer of Health—Dr. T. A. Somerville, till his decease on December 4th.
Population at Census on April 1st, 1901—7,361.
Estimated Population in middle of 1905—7,800.
Area in acres—5,090.
Birth-rate per 1,000 living—20.0.
Death-rate per 1,000 living—13.0.
Death-rate from seven principal Zymotic Diseases—0.7.
Deaths under one year to 1,000 births—83.

The Annual Report for 1905 was prepared by Dr. Alfred Byers, who was selected as Medical Officer of Health for Wilmslow Urban District on January 2nd, 1906, and duly appointed on February 5th.

This Urban District was formed of part of Fulshaw, part of Bollin Fee, and part of Pownall Fee.

The population of the whole District was 6,344 at the Census in 1891, and 7,361 at the Census in 1901. The increase in the population during the decennium 1891-1901, was thus 1,017, that is 16 per cent. The estimate of the population made for the middle of the year 1904 assumes that there has been an increase since the Census, of 439.

During 1905, the number of births registered was 156, and the number of deaths registered (including the deaths of

8 residents registered elsewhere) was 102. Two of those born were illegitimate. The birth-rate is about 3 below the average in the District in 1898-1904, and the death-rate is about 2 below the average in the District in 1898-1904.

Six deaths were ascribed to the principal zymotic diseases, viz.:—2 measles, 1 scarlet fever, 1 whooping-cough, 1 diphtheria, and 1 diarrhœa. There were also 2 deaths from influenza, and there was 1 death from erysipelas.

There were 6 deaths from phthisis, 6 from cancer, 9 from bronchitis, 10 from pneumonia, 16 from heart diseases, and 5 from accidents.

Only 13 of those who died were infants under a year old, and 46 were persons 65 years old and upwards.

Cases of Infectious Disease notified.—There were 210 cases of infectious disease notified, viz.:—197 measles, 2 diphtheria, 7 scarlet fever, 1 enteric fever, and 3 erysipelas. Of these 1 case of diphtheria, 1 of enteric fever, and 2 cases of scarlet fever, were isolated in Hospital at Baguley.

Zymotic Mortality.—There were 6 deaths from the principal zymotic diseases, viz.:—2 measles, 1 scarlet fever, 1 whooping-cough, 1 diphtheria, and 1 diarrhœa. There was also a death from erysipelas, and 2 deaths occurred from influenza.

Measles.—In the Annual Report for 1900 it was stated that measles had been added to the list of notifiable diseases. On the whole, it appears to have been a very prevalent disease in 1905. Considering the large number of cases reported, the mortality was not very high.

Isolation Hospital Accommodation.—Wilmslow is one of the Districts forming the Bucklow Joint Hospital District, and thus has Hospital accommodation for the isolation and treatment of infectious cases, including cases of small-pox.

Steam Disinfector.—Infected bedding, etc., can be disinfected at the Hospital disinfector by arrangement.

Arrangement with Professor Delepine.—The District Council have made arrangements with Professor Delépine, Victoria University of Manchester, whereby Medical Practitioners can obtain a bacteriological examination of material from doubtful cases of diphtheria, typhoid fever, etc., the Council undertaking to pay the fees.

Wilmslow Urban District.

Water-supply.—The water supplied by the Stockport Corporation Waterworks is obtained from boreholes in the new red sandstone.

The water is pumped into a softening plant, where it is treated with lime only. As raised from the boreholes, the hardness of the water is about 14 degrees "Clarke's" Scale, and after treatment, is from 6 to 7 degrees. The supply is good and ample for all requirements of the District.

Three samples of water taken from private wells were analysed during the year. In two cases, the report being unfavourable, the wells were closed, and town's water laid on in place thereof. In the third case, the well was cleaned out, and will be sampled again shortly.

Dairies, &c.—Regulations made by the District Council under the Dairies, Cowsheds, and Milkshops Order, came in force on January 1st, 1900. Active measures are taken to give effect to these regulations.

Factory and Workshop Act.—Attention has been paid to this Act. The premises coming within scope of the Act have been inspected, and suggestions for alterations and improvements made by the Medical Officer of Health have been willingly carried out by the owners.

As a whole, the condition of these premises has been found satisfactory. There are 3 Factories on the Register, 12 Workshops, and 33 Workplaces. There are 3 underground Bakehouses in the District, and these have been granted certificates.

Slaughter-houses have been inspected and found to be in a fairly satisfactory condition. One slaughter-house was pulled down during 1904, and a new one was built.

Lodging-houses have been inspected and found to be in good order.

Refuse Removal.—In the Annual Report for 1900 it was stated that the District Council had resolved to undertake emptying of ashpits, etc., the contents to be used by farmers on their land. The Medical Officer of Health now reports that this resolution has not been carried out. The ashpits continue to be emptied badly and irregularly, and the result is, more or less, a nuisance, which might be avoided.

The District Council ought to make arrangements for this work being regularly and systematically done.

Wilmslow Urban District.

House Accommodation for the working classes is good and sufficient.

Nuisance Abatement.—Nuisances reported or discovered receive attention, and steps are taken to obtain their abatement.

Main-drainage.—The Northern and Southern portions of the main-drainage scheme are in good working order. The portion passing through Fulshaw Park was completed in 1902.

Outfall Works—Samples of effluents from the Northern and Southern Outfall Works have been frequently tested during the year, and have been reported to be "fair" effluents.

WINSFORD

Urban District.

Medical Officer of Health—Dr. T. W. H. Garstang.
Population at Census, April 1st, 1901—10,382.
Estimated Population in middle of 1905—10,355.
Area in acres—5,780.
Birth-rate per 1,000 living—30.2.
Death-rate per 1,000 living—15.1.
Death-rate from seven principal Zymotic Diseases—2.8.
Deaths under one year to 1,000 births—115.

The population of Winsford Urban District was 10,440 at the Census in 1891, and 10,382 at the Census in 1901. The decrease of the population during the decennium 1891-1901 was thus 58, that is 0.55 per cent.

The Urban District consists of the Parishes of Over and Wharton. The area and population at the date of the Census are given as follows:—

	Area in Acres.	Population at Census.
Over	4,527 ...	7,063
Wharton (including Gravel Lane)	1,253 ...	3,319

During the decennium, the population of Over increased by 228, and the population of Wharton decreased by 286.

It is estimated that in the middle of the year 1905, the population of Over was 7,100, and the population of Wharton was 3,255.

Winsford Urban District.

During 1905 the number of births registered was 313, and the number of deaths registered (excluding 3 not belonging to the District, and including 2 registered elsewhere) was 156. During 1895—1904, the corrected average birth-rate was 33.6 per 1,000 living, and the corrected average death-rate was 15.6 per 1,000 living. The birth-rate was therefore 3.4 below the average, and the death-rate was 0.5 below the average.

Illegitimate Infants.—Eighteen of those born were illegitimate, or nearly six per cent. Four of these died, in the first year of life, that is 22 per cent. Of the legitimate infants 32 died in the first year, that is 11 per cent.

Uncertified Deaths.—Four of the deaths were not certified by a Medical Practitioner, or by a Coroner's Jury One was a woman 72 years old, who had bronchitis and heart failure, one was a female child 5 months old, who died of convulsions, and 2 were male twins, who were premature, and died a few minutes after birth.

Coroner's Inquests.—Inquests were held in 9 cases, of which two were on persons who died at the Albert Infirmary, and who belonged respectively to Middlewich and Sandbach. The others were on a child, 3 years old, who was accidently drowned in a tub; a man, 22 years old, who was found drowned in the river; a man, 23 years old, who died from syncope; a man, 66 years old, who died from being knocked down by a cyclist; a male child, 3 years old, who died from inflammation of the lungs, owing to orange pulp in the bronchus; a male child, 2 years old, who died of convulsions, following an attack of measles; and a man, 60 years old, who was found dead, and whose death was ascribed to apoplexy.

Infant Mortality.—Thirty-six of those who died were infants under a year old. The proportion of deaths to each 1,000 births was, therefore, 115. The proportion in 1895-1904 was 135. The chief causes of deaths of infants in 1905 were, 5 measles, 1 whooping-cough, 5 diarrhœa, 1 tubercular disease, 4 bronchitis and pneumonia, 10 premature births, and 5 convulsions. The infant mortality rate is not high, but it may be pointed out, that about one-half of the deaths of infants were due to causes which could easily have been prevented, had the parents possessed better knowledge.

Infectious Disease Notified.—The number of cases of infectious disease notified in 1905 was 51, viz.:—2 diphtheria, 25 scarlet fever, 1 enteric fever, 2 puerperal fever, and 21

erysipelas. Of these, 5 were removed to the Isolation Hospital, viz. :—2 diphtheria, and 3 scarlet fever.

Zymotic Mortality.—There were 29 deaths from the principal zymotic diseases, viz. :—21 measles, 1 scarlet fever, 1 whooping-cough, and 6 diarrhœa. There was also one death from epidemic influenza.

Vaccination.—With the assistance of the Vaccination Officer, the Medical Officer of Health is able to give statistics as regards vaccination for the Over Sub-District of the Northwich Union, of which the town of Winsford forms more than three-fourths. The statistics are for a period of nine years.

Year.	Number of Births Registered.	Successfully Vaccinated.	Insusceptible.	Had Small-pox	Dead Unvaccinated.	Postponed on Medical Certificate.	Removed, and Traced.	Removed, and Lost.	Conscientious Objections.	Unaccounted for.
1896	472	422	1	—	41	6	—	2	—	—
1897	450	398	—	—	49	2	—	—	—	1
1898	428	379	—	—	43	2	1	—	2	1
1899	421	385	—	—	32	1	2	—	1	—
1900	428	374	—	—	37	13	1	1	2	—
1901	393	361	—	—	22	7	—	1	2	—
1902	404	374	1	—	24	3	—	—	2	—
1903	403	350	—	—	42	4	2	—	5	—
Total in 8 years.	3399	3043	2	—	290	38	6	4	14	2
1904	427	373	1	—	41	5	1	1	5	—

In 1904 there were 373 children vaccinated out of 386 surviving—that is 97 per cent. If the children be included whose vaccination is temporarily postponed, the percentage is increased to 98. Practically the same results have been obtained during the whole nine years to which the figures refer.

Measles.—It will be remembered that at the end of 1904 there was a sharp outbreak of this disease at Meadow Bank. Mr. Blagg was appointed temporary Inspector, and supervised nearly 200 cases, besides contacts, so successfully that not a single death occurred. During December a few cases, perhaps half-a-dozen, occurred in the town itself, but it was not until February 5th, 1905, that the first death took place. The Medical Officer of Health recommended the continued employment of

Mr. Blagg, but this was not agreed to. An epidemic gradually spread through Over, where by March 26th there had been 15 deaths, and it afterwards spread to Wharton, where between March 28th and May 27th there were 6 deaths. How many cases occurred it is impossible even to estimate. The Medical Officer of Health is of opinion that, had the Special Inspector been kept at work, many of the cases would not have occurred. As there were in all 21 deaths from measles in 1905, the measles death-rate was equal to 2 per 1000 living.

Diphtheria.—The two cases notified were both from one house in November. They were removed to the new Isolation Hospital at Davenham, and in due course were discharged cured.

Whooping-cough.—During 1905 there seems to have been no special prevalence. The one death from whooping-cough occurred in January, and was probably connected with the epidemic of 1904.

Scarlet Fever.—Twenty-five cases occurred during the year, scattered over the whole District, and throughout the twelve months. One case was in the Rilshaw Lane Hospital in March, and died there, death being probably as much due to general (tubercular?) cachexia as to scarlet fever. No other case died. Two in October were removed to the new Sanatorium at Davenham, and duly discharged cured.

Enteric Fever.—The only case of this disease was notified in April. A bacteriological examination was made of serum from the patient, but the result was negative.

Diarrhœa.—Five of those who died from this disease had not completed their first year, and the remaining 1 was under 3 years old. Five out of the 6 cases occurred between June and October.

The comparative freedom of the District during the year from enteric fever and diarrhœa was remarkable.

Erysipelas.—Of the 21 cases notified, 2 proved fatal. This is a very unusual experience. Those who died were aged respectively 67 years and 71 years. They lived not far away from one another. One died on October 23rd and the other on October 26th.

Phthisis.—Four out of the 5 who died from this disease were males. The phthisis death-rate was equal to 0.5 per 1,000

living. There were only 3 cases of phthisis notified in 1905. Two of the notifications were received after death. There have been in all 33 cases notified in a period of 5 years, of which not more than 2 survived. The deaths registered in the same 5 years were 32.

The District Council very generously sent a woman, 21 years of age, who was suffering from phthisis, to the Crossley Sanatorium. She was an inmate from September 2nd to November 18th, but the disease was too far advanced to be arrested, and the patient died 6 weeks after her return home.

Other Tubercular Diseases.—Two of those who died were males, and 3 were females. The ages of the sufferers were respectively 3 months, 2 years, 18 years, 24 years, and 27 years. In 3 instances the tubercle was in the abdomen, in 2 it was in the membranes of the brain.

Cancer.—Four of those who died were men, and 3 were women. Their ages ranged from 36 years to 78 years. The disease was in every case abdominal.

Alcoholism.—The 4 who died from this disease were all men. Their ages ranged from 60 years to 65 years.

Isolation Hospital.—The Northwich Joint Hospital Board has now opened a fully equipped sanatorium at Davenham, in the Rural District Four cases were sent in from Winsford during October and November, but none remained, at the end of the year. The cases referred to were 2 of diphtheria and 2 of scarlet fever.

The small wooden Hospital at Rilshaw Lane was, as already stated, used for the isolation of 1 case of scarlet fever.

Disinfection of Premises.—The Inspector is provided with an equifex sprayer.

Systematic Inspection.—Many more visits have been paid to Winsford by the Medical Officer of Health during 1905, than during any previous year. This is due to there having been no Inspector of Nuisances since July.

Inspector of Nuisances.—Mr. Ralph Oakes, who has for so many years filled this responsible post, with credit to himself, and uniform satisfaction to the District Council, was seized with illness in July, and his work was temporarily transferred to Mr. Wilkinson, the Surveyor. However, he also was for a time incapacitated, and Mr. Birtwistle, from his office, had to take his

place. Mr. Oakes ultimately thought it best to send in his resignation, and a new appointment was made to take effect from January 1st, 1906. In bidding official farewell to Mr. Oakes, the Medical Officer of Health cannot sufficiently express his personal regret at the loss of his services. Mr. Oakes has been of the greatest possible assistance for the 10 years during which the Medical Officer of Health has held his present position at Winsford.

Nuisance Abatement.—This has received as much attention as practicable. A close supervision is exercised over all conditions likely to cause nuisances, and formal notices have been issued and enforced when needful. As a fact, only a small number of formal notices are needed, by far the largest proportion of the nuisances created being promptly remedied at the Inspector's request.

Overcrowding.—Seven cases have been dealt with during the year.

Refuse Removal.—Ashpits are emptied monthly, and privy middens 3 times a year. Deposits of refuse and manure are cleared away every month to a place provided for the purpose by the Council.

Peat Pails.—During 1900 an attempt was made to introduce the "peat-pail system" to Winsford. An explanatory circular was drawn up, describing the system, and distributed to property owners. Twenty-eight peat-pails were installed in 1900, 73 in 1901, 41 in 1902, 58 in 1903, 68 in 1904, and 42 in 1905. These pails are much appreciated. Each pail, on being put in position in the closet, is charged with ground peat, accidulated, so that effluvium nuisances are prevented. The sanitary condition of the District would be improved by the general adoption of this system of refuse removal for all cottage property.

Schools.—According to an excellent plan adopted in this District, advantage is taken of the ordinary holidays to disinfect all Schools twice in the year.

Common Lodging-houses.—There are three, and each has been inspected six times, and found satisfactory.

Water-supply.—This is exceptionally good, both in quantity and quality.

Dairies, Milkshops and Cowsheds —Dairies and milkshops (12) have been inspected every month, and found satisfactory.

The majority of Cowsheds (about 60) have been inspected quarterly, and no special complaints made. The usual notices about lime-washing were sent to all cow-keepers in April and September.

Factories and Workshops.—The sanitary arrangements at all the Factories are good, and the means of escape from fire sufficient. The workshops are mostly extremely small.

Sewage Treatment.—The filtration beds continue to work efficiently and inexpensively. All the beds were raised during 1902, and one additional bed was made.

Canal Boats.—The number of boats inspected in 1905 was 10. These boats were all rather river-boats than canal-boats in the ordinary sense. They were all found to be in good order, complying with the requirements of the Canal Boats Acts, and the regulations made thereunder. Ordinarily the cabins are not used as residences.

YEARDSLEY-CUM-WHALEY

Urban District.

Medical Officer of Health—Dr. H. Allan.
Population at Census on April 1st, 1901—1487.
Estimated Population in middle of 1905—1530.
Area in acres 1323.
Birth-rate per 1000 living—26.9.
Death-rate per 1000 living—15.6.
Death rate from seven principal Zymotic Diseases—0.
Deaths under one year to 1000 births—73.

The population of this Urban District was 1,235 at the Census in 1891, and 1,487 at the Census in 1901. The increase of the population during the decennium, 1891-1901, was thus 252, that is 20.4 per cent. The estimate of the population made for the middle of 1905 assumes that the population has been still increasing, but not at the same rate.

The District includes Bridgemont and Stoneheads.

During 1905, the number of births registered was 41, and the number of deaths registered (excluding 4 of persons not belonging to the District) was 24. The birth-rate is about the average rate in 1895-1904, and the death-rate is about 2.3 above the average rate in the same 10 years. The

causes of death certified, include 1 from tubercular disease, 2 from cancer, 4 from bronchitis, 1 from pneumonia, 1 from premature birth, 4 from heart diseases, and 1 from an accident.

Cases of Infectious Disease notified.—Only 7 cases of infectious disease were notified, viz.:—3 diphtheria, 1 scarlet fever, 1 puerperal fever, and 2 erysipelas. These were investigated, and isolated, as far as practicable, at home.

Whooping-cough.—In the autumn there were many cases of whooping-cough amongst children.

Puerperal Fever.—The case of this disease was notified in April, the subject being a person who had just moved into the District. The case was attended by a midwife, and proved fatal. The midwife was advised as to the disinfection of herself and her clothing, and instructed not to attend any further case of confinement for a period of at least three weeks.

Diphtheria.—A case of diphtheria was notified in August at a farm house, and might have arisen from a shortage of water in the dry season, not allowing a sufficient quantity to properly flush the drains. The two other cases were also in the autumn. The Medical Officer of Health visited the houses where they occurred, but was unable to discover any definite cause of origin.

Water-supply.—In the Report of 1898, the Medical Officer of Health stated that it was certainly most desirable that a proper water supply should be available, and that no time should be lost in procuring it. During 1899, the District Council entered into a provisional agreement with Col. Cotton-Jodrell for the acquisition of his water rights at Stoneheads and Diglee. The District Council also made application to the Local Government Board for sanction to borrow £7,000, to carry out an efficient scheme for furnishing the District with water. An inquiry was held by an Inspector of the Local Government Board in September, 1900, and in the summer of 1901 the Board sanctioned the borrowing of the sum named. Contracts were forthwith let and the necessary work was proceeded with. During 1902 the public water supply was completed, and a large number of houses have this water. However, there are still several houses without good water. The whole District should be supplied at an early date.

Systematic Inspection of the District is made from time to time by the Medical Officer of Health and Inspector. Thus defects are discovered, and improvements are made.

Yeardsley-cum-Whaley Urban District.

Nuisance Abatement.—The most common cause of nuisances is the insanitary state of the closets and ashpits requiring to be emptied, defective house drains, untrapped drains, defective rain-pipes and gutters, windows that will not open, and animals so kept as to be a nuisance. As a rule the defects pointed out have been remedied without the Authority being put to the trouble of serving formal notices.

In 1905, at the Railway Station at Whaley Bridge, it was found necessary to take up the water-closets and re-set them. The cesspool in connection with them was re-adjusted, and ventilated by a shaft carried up 44 feet above the buildings. At the same time, the old stone drains were removed, and replaced by earthenware pipes, properly jointed to about 50 yards.

A sanitary arrangement at Whaley Hall proved defective, and all the drains, etc., were inspected by an eminent Manchester Engineer, and at his suggestion the whole system was reconstructed. Minor defects in drainage were found to exist at Market Street, Whaley Bridge; Whaley Lane, Hawkhurst Farm, and at Furness Vale, these were remedied, and are now placed in a satisfactory condition.

Refuse Removal.—Emptying of closets and ashpits has been a source of annoyance during the year, being irregularly and badly done.

It is pointed out that the District Council might with advantage consider the advisability of making arrangements for the systematic emptying of privies and ashpits. If the District Council were to get this work done regularly, many nuisances would be prevented.

Sewerage System Needed.—The Medical Officer of Health has from time to time reminded the District Council of the need of a proper system of sewerage and sewage disposal.

Improvements.—The improvements mentioned in the last Annual Report, viz.:—The re-paving, flagging, and draining of Market Street, Whaley Bridge, has greatly advanced the sanitary condition of Whaley Bridge. The erection of a new iron bridge to replace the old stone one, over the River Goyt, has made traffic much safer.

Factory and Workshop Act.—The Medical Officer of Health and Inspector, have visited the Factories and Work-

shops in the District, including bakehouses and slaughter-houses. They found them generally satisfactory, as regards cleanliness, light, ventilation, and sanitary arrangements. The provisions made for escape in case of fire are ample.

Canal Boats.—Nine boats have been inspected. All were found to comply with the regulations.

BUCKLOW

Rural District.

Medical Officer of Health—Dr. T. W. H. Garstang.
Population at Census on April 1st, 1905—19,890.
Estimated Population in middle of 1905—21,145.
Area in acres—57,651.
Birth-rate per 1000 living—19.6.
Death-rate per 1000 living—12.0.
Death-rate from seven principal Zymotic Diseases—0.9.
Deaths under one year to 1000 births—99.

The population of this Rural District was 19,890 at the Census in 1901, and the population of the corresponding area was 17,793 at the Census in 1891. The increase of the population during the decennium 1891-1901 was thus 2,097, that is 11.7 per cent. The estimate of the population made for the middle of 1905 assumes that the population since the date of the Census continued to increase at about the same rate.

The number of births registered in the District in 1905 was 415, and the number of deaths registered in the District in 1905 was 239. From the total of registered deaths the deaths of non-residents must be excluded, and the deaths of residents (which took place elsewhere) must be included. The number of deaths belonging to the District was 254. The birth-rate is 3.2 below the average in 1895-1904, and the death-rate is 1.4 below the average in the same ten years.

For registration purposes, the District has long been divided into four sub-districts. These are as follows :—

1. Altrincham, having an area of 11,854 acres, includes Baguley, Timperley, Ringway, Ashley, and Dunham Massey.

2. Lymm, having an area of 14,498 acres, includes Carrington, Partington, Bollington, Warburton, High Legh, Agden, Millington, and Ashton-by-Budworth.

3. Knutsford, having an area of 20,811 acres, includes Tabley (Superior and Inferior), Mere, Rostherne, Tatton, Marthall, Peover (Superior and Inferior), Ollerton, Toft, Bexton, Plumbley, and Pickmere.

4. Wilmslow, having an area of 10,488 acres, includes Styal, Mobberley, Northenden, and Northern Etchells.

A fifth sub-district has quite recently been made. The Township of Baguley (taken from Altrincham sub-district), Carrington (taken from Lymm sub-district), and Northenden (taken from Wilmslow sub-district), make the new Sale sub-district as far as the Rural District is concerned.

In 1905 the birth-rates of these five sub-districts were, respectively, 21.6, 13.0, 17.7, 14.0, 27.9 ; and the death-rates of these five sub-districts were, respectively, 11.2, 12.3, 13.9, 9.7, and 13.7.

Infant Mortality.—The number of those who died before completing their first year was 41. The causes of death registered are chiefly as follows :—1 measles, 1 scarlet fever, 1 whooping-cough, 6 diarrhœa, 7 enteritis, 1 tubercular disease, 3 bronchitis, 1 pneumonia, 8 premature birth, 7 debility, and 3 convulsions. Forty-one deaths are equal to 99 per 1,000 births. In 1895-1904 the deaths of infants were equal to 113 per 1,000 births.

Illegitimate Children.—Thirteen of those born in 1905 were illegitimate children, that is 3 per cent. of all births. Of these one has died.

Coroner's Inquests.—Twenty-four deaths formed the subject of official inquiries, but three of these were of persons not belonging to the District. Particulars of the 21 inquests are given in tabular form.

Date	Sex	Age	Where Held	Where Belonged to	Verdict
Feb. 26	F	23	Timperley	Timperley	Suicide by drowning; temporarily insane.
Apr. 14	F	46	Dunham Massey	Dunham Massey	Heart disease and over-exertion.
June 9	M	4	Dunham Massey	Dunham Massey	Shock from burns; playing with matches.
July 19	M	69	Timperley	Timperley	Suicide by drowning in canal.
Sep. 11	M	64	Altrincham	Dunham Massey	Suicide by hanging; temporary insanity.
Oct. 2	F	63	Dunham Massey	Dunham Massey	Fractured skull, from a fall.
Jan. 19	M	26	Altrincham	Warburton	Suicide; cut throat; temporary insanity.
June 22	M	20	Partington	Partington	Fall (52 feet) from top of hoist.
„ 28 (1904)	M	46	Manchester	Peover Inferior	Accidental fall, internal injury.
Jan. 7	M	58	Rostherne	Rostherne	Weak heart. Shock from fall out of dog-cart.
Jan. 18	M	76	Plumbley	Plumbley	Weak heart. Shock from fall out of cart.
Aug. 26	M	38	Altrincham	Tabley Superior	Fractured skull, from fall off lurry.
Dec. 27	F	68	Ollerton	Ollerton	Heart disease.
July 27	F	70	Mobberley	Mobberley	Syncope. Shock from fall downstairs.
Aug. 29	M	47	Northen Etchells	Northen Etchells	Suicide, cut throat; temporary insanity.
Aug. 29	M	24 days	Styal	Styal	Marasmus. Want of medical attention.
Jan. 7	M	54	Northenden	Northenden	Fractured skull. Accidental fall from cart.
Mar. 31	M	32	Northenden	Northenden	Suffocation by drowning (accidental).
Apr. 5	F	33	Northenden	Northenden	Suicide. Cut throat. Of unsound mind.
Apr. 14	M	8	Urmston	Northenden	Accidentally drowned in river.
Sep. 5	M	38	Baguley	Baguley	Syncope.

No uncertified death was registered in the District in 1904 and 1905. Only one uncertified death was registered in 1903.

Cases of Infectious Disease notified.—The number of cases of infectious disease notified in 1905 was 108, viz. :—31 diphtheria, 58 scarlet fever, 2 enteric fever, 3 puerperal fever, and 14 erysipelas. Of these, 43 were isolated in hospital, viz. :—11 diphtheria, and 32 scarlet fever. The average number of notifications for the 15 years immediately preceding 1905, was 105 a year For the fifth year in succession diphtheria is much above the average.

Bucklow Rural District.

Zymotic Mortality.—The number of deaths from the seven principal zymotic diseases in 1905 was 21, viz. :—5 measles, 4 scarlet fever, 1 whooping cough, 4 diphtheria, 1 enteric fever, and 6 diarrhœa. The zymotic death-rate was thus 0.9 per 1,000 living, which is just below the annual average in the District. There were also 7 deaths from epidemic influenza.

Prevention of Infectious Disease.—The usual precautions are taken in all known cases of infectious disease to prevent its spread, as detailed in previous Annual Reports.

Vaccination.—As no cases of small-pox occurred, the next matter to notice is vaccination. The Medical Officer of Health in all previous Annual Reports, except the three last, abstained from giving any figures relating to vaccination, on the ground that it was impossible to separate those belonging to the Rural District from the totals published as belonging to the Union. This year here produces the figures for the Union for a period of eight years, 1896-1904 inclusive. This records the vaccination for the Rural District of Bucklow and the Urban Districts of Altrincham, Bowdon, Hale, Sale, Ashton-upon-Mersey, Lymm, Knutsford, and Wilmslow. The tabular statement is given as follows :—

1904.	Births.	Successfully Vaccinated	Insusceptible.	Had Small-pox.	Died Unvaccinated.	Postponed on Certificate.	Removed and Traced.	Lost.	Number Remaining.	Conscientious Objections.
Altrincham ...	410	366	5	—	27	6	—	1	1	6
,, ...	331	299	2	—	18	7	2	—	—	4
Lymm ...	87	78	—	—	7	2	—	—	—	2
,, ...	98	89	1	—	2	2	—	1	—	1
Knutsford ...	108	99	—	—	7	1	—	—	—	1
,, ...	109	99	1	—	7	—	—	1	—	1
Wilmslow ...	138	119	—	—	8	10	1	—	—	4
,, ...	106	87	1	—	6	6	1	—	—	1
Sale ...	290	256	2	—	18	6	1	3	1	3
,, ...	299	259	5	—	22	2	2	7	1	3
Totals ...	1976	1751	17	—	122	42	7	13	3	26
1896 to 1903 inclusive...	15156	12900	140	—	1321	458	72	146	10	109
Grand Totals...	17132	14651	157	—	1443	500	79	159	13	135

Bucklow Rural District.

In 1904, out of 1,854 surviving children, 1,751 are known to have been vaccinated, or 94.4 per cent.; whilst if cases medically postponed, and those removed and traced be assumed to have been ultimately vaccinated in the same proportion, among the survivors (an assumption to which there can be no logical objection) the percentage vaccinated of the whole is nearly 97.1. The corresponding percentages for the whole nine years are 93.4 and 97.1.

Measles.—Several small localised outbreaks occurred during the year, and various schools were on this account closed for short periods. Three deaths occurred in Ashley, respectively in June, July and September, and two in Northenden respectively in August and October. The Medical Officer of Health made many visits of inspection, but found he could exercise little control. In his opinion the cost of a special Inspector would not have exceeded £10 altogether.

Scarlet Fever.—The 58 cases notified seemed to indicate that the disease was a little less prevalent than usual. Four of the cases proved fatal. One of these was a case belonging to Timperley in July, which had been moved to the Sanatorium, where death took place; and 3 belonging to Northenden, which proved fatal, all after removal to the Sanatorium. Twenty-eight of the cases removed to the Sanatorium were discharged well. Cases were spread over the year, and in many localities. On two occasions only was there anything resembling a slight epidemic. There were 9 attacked with this disease at Timperley, the first being notified in January, and the last in December. At Northenden 4 cases were reported respectively in February, March, May, and October, and then there was an outbreak in November of 7 cases in three adjoining cottages. At Mere, there were 4 cases in March, 2 in April, 4 in June, 2 in July, 3 in August, and 3 in December. There is no doubt these cases were connected together, as one child was notified twice (in March and July) and 2 other children were notified twice (in March and August), either therefore 3 out of 14 had each two attacks within 4 months, or they had scarlet fever and measles, or German measles which was mistaken for scarlet fever. One case sent to the Sanatorium in April as scarlet fever, was there diagnosed and treated as measles, upon which two other notifications were withdrawn.

Value of Hospital Treatment.—Certain Medical Officers of Health are now throwing doubt upon the value of removal to hospital as a means of checking an epidemic. Without any intention of joining the controversy, and without any wish to criticise opinions based upon results observed in large towns, the

Bucklow Rural District.

Medical Officer of Health of Bucklow Rural District feels it his duty to record, without hesitation, his firm opinion that in the District prompt removal to hospital is the only effectual means whereby he can record year after year "no epidemic," in spite of the constant occurrence of individual cases, scattered over a wide area, and representing the introduction of infection so many times, and from so many independent sources.

Diphtheria.—The 31 cases notified are double the average number in this District. Three cases were fatal after their removal to the Sanatorium, respectively, in January, February and July, and one case, not removed, was fatal in August. The cases were so scattered, both as regards time and locality, that there was no epidemic.

Twenty Townships had no cases at all. Aston had 1 case in January, Over Peover 1 case in January, Ashley 1 case in February, Mere 1 case in August, Mobberley 1 case in November, Ringway 4 cases (but all in one house) in February, Baguley 2 cases in July and December, Dunham Massey 6 cases in January, February, September and October, of which 3 were in one house, in September, leaving the others quite separate, Northenden had 6 cases in May, July, August and September, of which 3 were in May, and Timperley had 8 cases in February, March, May, September and November.

Considering that the 3 last named Townships are the most populous in the District, the incidence is not heavy. However, during the years 1901-1905, diphtheria has certainly increased in this District, as it has also in other districts. Although the use of antitoxin has largely diminished the fatality from this disease, there are yearly several deaths therefrom. Of the 31 cases, only 11 were removed to the Sanatorium.

Diagnosis of Diphtheria.—Bacteriological examination of morbid products from the patient is available in all cases.

Diphtheria Antitoxin.—In accordance with a suggestion from the County Council, a supply of antitoxin is now kept at the Inspector's Office for the convenience of Practitioners who do not store it. It will be issued gratuitously in suitable cases, in others at cost price.

Mumps.—This disease was prevalent in some parts (mainly Baguley and Timperley) with quite exceptional severity, and led to the closing of some schools. No deaths are attributed to it.

Bucklow Rural District.

Enteric Fever.—Two cases notified, 1 death. One case occurred at Partington in February, the result of bacteriological examination was negative. Notifications of a case at Carrington in April, and a case at Partington in May, were withdrawn, on similar negative results being obtained. The fatal case occurred at Dunham Massey in October.

Diarrhœa was the registered cause of 6 deaths, all those who died being infants under a year old. A death occurred in Timperley in July and 2 deaths in August, and one in September, in the same Township. There was a death at Carrington in August, and 1 at Northenden in September.

Enteritis was the registered causes of 8 deaths, seven of those who died being infants under a year old, and one a child of five.

Influenza was the registered cause of 7 deaths occurring in 7 different Townships. Two of those who died were males, and 5 females. The ages of those who died were respectively 3, 23, 36, 59, 66, 69, 83 years.

Puerperal Fever.—The 3 patients who suffered from this disease all recovered. Two were in Timperley, and 1 was in Dunham Massey in August. All were in connection with practice by midwives.

Phthisis caused the death of 12 persons, *i.e.*, equal to 0.57 per 1,000 living. The number of deaths during 1900-1904 was respectively, 10, 15, 22, 18, 17, making a total of 82. In the same period only 14 cases were notified.

Other Tubercular Diseases.—There were 7 deaths due to these, being equal to 0.33 per 1,000 living. All those who died were children. Three deaths were ascribed to tuberculosis simply, 2 to meningitis, 1 to tumour of the brain, and 1 to peritonitis.

Cancer was the cause of 30 deaths, this number being equal to 1.42 per 1,000 living. The deaths in the 4 years immediately preceding were respectively, 21, 13, 20, and 12. In 17 cases the digestive organs were affected, in 5 the reproductive system, in 4 the head and neck, in 1 the bladder, and in 3 cases the organs affected were not specified.

Diseases of the Respiratory Organs.—Thirty-nine deaths were ascribed to bronchitis, pneumonia, or other disease

of the respiratory organs. The number is equal to 1.84 per 1,000 living.

Alcoholism.—Seven deaths were ascribed to alcoholism or cirrhosis of the liver, 4 of those who died being men, and 3 women. This is an unusually large number.

Heart Diseases were the cause of 29 deaths. This number is equal to 1.37 per 1,000 living.

Isolation Hospital Accommodation.—in the Annual Report for 1902 it was reported that the Sanatorium at Baguley was opened in December of that year. Thirty-five beds in this Isolation Hospital are allotted to the Bucklow Joint Hospital Board, which includes the Bucklow Rural, and Alderley Edge, Ashton-on-Mersey, Hale, Knutsford, Sale, and Wilmslow Urban Districts. The Joint Hospital Board has also provided a Small-pox Hospital at Newhall Green.

During 1905, one case of scarlet fever occurred in the Cottage Homes at Styal, and was dealt with by the Chorlton Union. One case of scarlet fever, and one case of diphtheria, occurred among the Nurses at the Baguley Sanatorium, and were there dealt with. From the District were removed 10 cases of diphtheria, and 30 cases of scarlet fever. Thus 43 cases were removed out of 108, or 40 per cent.

Since removal to Hospital was commenced in 1898, the numbers have been—

Year.	Notifications.	Removals.	Percentage.
1898	46	5	10
1899	106	16	15
1900	96	42	43
1901	158	50	31
1902	102	27	27
1903	97	57	59
1904	117	63	54
1905	108	43	40

Six of the cases removed to Hospital proved fatal, and three of those not removed. This appears to tell against removal, but the explanation is that several cases were removed which were already in an almost hopeless condition.

Anthrax among Animals.—This seems to be growing more common. There were 2 outbreaks in Mere, 2 in Dunham Massey, and 1 in Marthall, the animals affected being 3 cows, 3 sheep, and 1 pig. In each case the carcases were cremated, and

the premises disinfected, by the County Police. There was no infection of human beings, so far as known.

Disinfection.—No apparatus is yet provided for disinfecting bedding, etc., by steam. For the disinfection of premises the formic-sulphugators of the Sanitas Company have been used. The Inspector sparks highly of them. It is claimed that they generate formic aldehyde, sulphurous acid gas and steam. They are portable, and lighted like a sulphur candle. The Authority have an apparatus for spraying with perchlorids of mercury solution, but it is too heavy to carry about for any distance. Householders are recommended to use chlorinated lime. However, the District Council have no officer or servant to undertake the duty of disinfection, and carry it out thoroughly. The work falls upon the already over-burdened shoulders of the Inspector of Nuisances, and he is naturally compelled to adopt a method which is easy and speedy in application, without too much regard to its claim to efficiency.

Systematic Inspection.—The Medical Officer of Health has done his best to comply with the official regulations, having visited every corner of the District during the year, and many places several times. These visits have as a rule been paid in company with either Mr. McKenzie or Mr. Metcalfe. Visits have also been made every day in various townships by these two officers in the performance of their respective duties.

School-closing.—In only a few instances has school-closing been required on account of local epidemics. In each case the school has been closed voluntarily by the Managers on the certificate of the local Medical Practitioner. This satisfies the Education Department. The Medical Officer of Health is thus relieved personally from the necessity of taking any further notice of the matter, and from making Special Reports to the Local Government Board and the County Council, under Art. 18 (15) of the Order of March 23rd, 1891. The Medical Officer of Health still maintains his previously expressed opinion that, from a public health point of view, this is a very unsatisfactory method of procedure, and from an educational point of view even more unsatisfactory.

Sewage Disposal.—There are three Sewage Works belonging to the District, viz.:—At Dunham Massey, Timperley and Northenden. They consist of tanks, filters, and land irrigation.

Dunham Massey—The existing outfall-works are small and imperfect, and drain only a very small area, in immedi-

ate contact with Altrincham and Bowdon. Large houses of the best class, on Dunham Hill, drain into three separate systems of sewers under three independent authorities, according to the run of the ancient Township boundaries. The Bucklow District outfall will be discontinued on the completion of the larger new scheme.

The new works are not yet even in operation. In May, 1904, defective work was found, which was attributed to the contractors, and a dispute arose which led to the stopping of all works. The contractors then took legal proceedings against the District Council, with reference to the Dunham Massey main outfall sewer, but in this they were not successful. The outcome, however, has been to cause the waste of another year. The Medical Officer trusts this long-delayed work will be completed in 1906. A very small length of sewer remains to be laid.

Timperley—This is an old outfall. The main sewer is a long one, with a faulty gradient, liable to silting. The Timperley outfall sewer, from Dark Lane outfall to the Railway Station, as noted in the Report for 1903, was cleaned out at a cost of about £200.

Northenden—This is a comparatively new outfall, and seems to be fairly efficient. A scheme is under consideration for its enlargement.

Partington—It is proposed to make a small filter for the sewage of Lock Lane and neighbourhood, but it has not yet been begun.

The Factory and Workshop Act.—The District Council has, by formal resolution, appointed Mr. McKenzie to be Inspector under this Act, and made the Medical Officer of Health responsible for its administration, in each case giving suitable remuneration for the work done. On March 7th, 1902, inspections were commenced systematically, along with the compilation of a register. The results of the inspections made in 1902 were given in the Report for that year. During 1903 there were 190 inspections made by the Inspector, often in company with the Medical Officer of Health. At the close of the year 1903, the Register contained particulars of 287 premises, comprising 28 factories, 127 workshops, and 132 domestic workplaces.

At the close of the year 1904 the Register contained 30 factories, 132 workshops, 130 domestic workplaces, and 2 outworkers.

Bucklow Rural District.

At the close of the year 1905, the Register contained 29 factories, 128 workshops, and 126 domestic workshops. In all, 173 inspections were made during the year.

Fifty-eight formal notices were served by the Authority of the Council, 43 of which required lime-washing of the premises, and 15 of which required the amendment of sanitary defects. Eleven cases of failure to post the Abstract of the Act were notified to H.M. Inspector. There are no underground bakehouses within the District, and there are only two out-workers.

Public Health Acts (Amendment) Act, 1890.—This Act has been adopted.

The Surveyor (Mr. McKenzie) and the Inspector (Mr. Metcalfe) furnish information as to matters coming under their supervision.

Building Plans.—During 1905, 90 sets of building plans were submitted for approval. Of these 67 sets of plans were approved, 16 were returned for amendment, and afterwards passed, and 7 were returned for amendment, and not re-submitted.

The plans approved were for 113 dwelling-houses, 9 new stables, 4 new cow-houses, for re-arrangement of 5 drainage systems, and for 21 alterations and additions.

Four cases of building without plans were reported. Of these, two were satisfactorily explained, and two were not satisfactorily explained. The latter were subsequently pulled down.

Building Bye-laws.—A Committee is engaged in revising the Building Bye-laws.

The Council's proposed amendments have been drafted and submitted to the Local Government Board, who have very favourably considered the suggestions made by the Council, and have asked for further suggestions in removing any oppressive clauses which the Council have difficulty in carrying into effect. It would appear the Council's District will have to be divided into Urban and Rural Areas, which the Local Government Board are quite prepared to countenance, with a separate set of Bye-laws for each.

Public Street Lighting at Timperley and Northenden.—The public roads of these Townships have been lighted with gas lamps under loans sanctioned by the Local Government Board.

Bucklow Rural District.

Dairies and Cowsheds.—The work of systematic inspection was continued in 1905, as in recent years. Every dairy, cowshed, or milk shop visited has been carefully examined. When defects have been noticed they have been reported to the Council, and notices have been served to obtain needful improvements. Many special visits have been made to meet and advise persons responsible for improvements. In a few instances, cowsheds and cows have been found dirty, and steps have been taken to ensure greater cleanliness in the future. A few cottagers, who are milk sellers in the summer only have not been registered.

There were 500 premises on the Register at the beginning of the year, and 517 at the close; the latter number are made up as follows:—Cow-keepers (not milk sellers), 297; purveyors of milk, and cow-keepers, 220; purveyors of milk (not cow-keepers), 7. There was only one application for registration during the year, and 1,024 notices were served (which include lime-washing notices sent out in May and October). There were only four new cowsheds built, and many altered.

Tuberculous Cows.—Two cases were notified by the Medical Officer of Health of Manchester; one at Peover Inferior, and one at Styal. Both animals had been reared on the respective farms. They were slaughtered under the supervision of the Manchester officials.

Slaughter-houses.—There are now 9 in the District, 1 additional license having been granted during the year. These premises are inspected frequently, and it is rarely necessary to call the attention of the occupiers to faulty methods in carrying out the business of slaughtering. No complaints were received during the year in connection with any of these premises.

Food Inspection.—Many examinations of meat, fish, fruit and vegetables have been made. All was found of good quality. No complaints were received.

House to House Inspection.—This part of the work has been continued, and 82 more houses were inspected. Many defects and nuisances were discovered, and the requisite steps taken to have the same remedied.

This brings the total number of houses inspected to about 235.

Water-supply.—Certificates were granted during 1905 for 92 new houses under the provisions of Sec. 6 of the Public Health (Water) Act, 1878. There were 86 houses supplied from the North Cheshire Co.'s mains, 5 from wells (the water having been first analysed), and one from a rain water tank.

Rivers Pollution Prevention Act.—Many visits were made by the Inspector to rivers and streams in the District, with a view of detecting any pollutions which might be taking place, and putting a stop to them. On several occasions he was accompanied by members of the Committee appointed to deal with the pollution of rivers and streams, the Medical Officer of Health, and the Surveyor.

Nuisance Abatement had full attention in 1905 as in previous years. The nuisances complained of, or discovered, were investigated, and such amendments were ordered as appeared to be required. As the result, many houses have been entirely re-drained, and at others the drains have been put in order.

All drains after being laid have been subjected to a hydraulic test before being passed. All soil pipes and ventilating pipes are tested before being passed.

Smoke Nuisance.—Three complaints were received during 1905. The works complained of are still under observation.

Refuse Removal.—This has been done by contract as in previous years at Northenden. The monthly returns show that there were 1,452 emptyings of ashpits, 788 emptyings of dust bins, and 216 emptyings of pails. The number of loads removed being 610. As regards Dunham Massey and Timperley, the work of refuse removal on the termination of the contract in June, 1904, was taken over by the District Council, and has since been done by the Council's own staff. The record of the work is as follows:—

	Dunham.	Timperley.	Total.
Visits to Separate Houses ...	1678	4383	6061
No. of Ashpits emptied ...	985	1737	2722
No. of Pails „ ...	178	1852	2030
No. of Dustbins „ ...	88	1003	1091
No. of Loads removed (ashes, &c.)	540	620	1160
No. of Loads removed (manure)	163	339	502

Since the work was thus taken over, very few complaints have been received, and the Inspector has been frequently told that the work is now done with greater efficiency.

Canal Boats.—Mr. McKenzie, District Surveyor and Inspector of Canal Boats, reports that during 1905 there were 85 Canal Boats inspected (including 11 manure boats). The boats were registered as dwellings for 258 persons, and on inspection were found occupied by 168, viz.:—118 men, 45 women, and 5 children.

Four formal notices were served in respect of infringements of the Canal Boats Acts, or Regulations made thereunder. That is to say, on board 2 boats there was foul bilge water, and on board 2 other boats, the certificate did not identify the owner. The terms of these Notices have been duly complied with. No legal proceedings were necessary. No case of infectious disease appears to have occurred on any Canal Boat.

CHESTER.

Rural District.

Medical Officer of Health—Dr. G. A. Kenyon.
Population at Census, April 1st, 1901—10,989.
Estimated Population in middle of 1905—11,287.
Areas in acres—35,517.
Birth-rate per 1,000 living—19.7.
Death rate per 1,000 living—10.1.
Death-rate from seven principal Zymotic Diseases—0.4.
Deaths under one year to 1,000 births—81.

The population of Chester Rural District was 10,989 at the Census in 1901, and 10,824 in the corresponding area at the Census in 1891. The increase in the population during the decennium 1891-1901 was thus 165; that is 1.5 per cent. The increase in the population of this Rural District between the Census in 1891 and the Census in 1901 would have been much greater but for the exodus of 1,137 persons enumerated at Elton, Ince, Stanlow, and Great Stanney, who at the time of the Census in 1891, were engaged in the construction of the Manchester Ship Canal.

The Census population as above is inclusive of 1,112 persons enumerated in the County Asylum, situated in the Parish of Upton-by-Chester, and 32 persons enumerated in Tarvin Union

Workhouse, situated in the Parish of Great Boughton. Excluding the populations of these two Institutions, the population of the Rural District at the Census in 1901 was 9,845. It is estimated that in the middle of the year 1904 this population was 10,100. There has been much building going on since the Census, and this estimate seems to be warranted. On it the birth-rate and death-rate have been calculated.

This Rural District has for registration purposes been divided into sub-districts, as follows :—

1. Chester Castle, having an area of 10,960 acres, includes Christleton, Littleton, Great Boughton, Chester Castle, Marlston-with-Lache, Eccleston, Eaton, Poulton, Pulford, Dodleston, Lower Kinnerton, and Claverton.

2. Chester Cathedral, having an area of 24,557 acres, includes Blacon-cum-Crabhall, Bache, Newton-by-Chester, Wervin, Croughton, Moston, Upton-by-Chester, Lea-by-Backford, Mollington, Backford, Chorlton-by-Backford, Caughall, Hoole (part of), Mickle Trafford, Bridge Trafford, Picton, Thornton-le-Moors, Wimbolds Trafford, Dunham-on-the-Hill, Hapsford, Elton, Ince, Stanlow, Great Stanney, Little Stanney, Stoke, Capenhurst, Shotwick, Woodbank, Great Saughall, Little Saughall, and Shotwick Park.

In 1905 the number of births registered in the District was 222, and the number of deaths registered in the District (excluding 109 not belonging to the District, and including 1 belonging to the District, which took place in Public Institutions) was 114. The birth-rate is about 20.8 below the average birth-rate of the District in 1895-1904, and the death-rate is about 1.4 below the average in the same 10 years. There were 5 deaths from the principal zymotic diseases, viz. :—1 measles, 2 scarlet fever, 1 enteric fever, and 1 diarrhœa. There was also 1 death from influenza. Among the other deaths recorded are the following :—5 enteritis, 3 phthisis, 8 cancer, 6 bronchitis, 11 pneumonia, 4 alcoholism, or cirrhosis of the liver, 7 premature birth, 15 heart diseases, and 5 accidents.

Cases of Infectious Disease notified.—There were 55 cases of infectious disease notified, viz. :—7 diphtheria, 42 scarlet fever, 3 enteric fever, and 3 erysipelas. Twenty-two of these cases were isolated in hospital, viz. :—3 diphtheria, 17 scarlet fever, and 2 enteric fever.

Chester Rural District.

Action taken to prevent spread of Infection.—All the houses where cases of infectious disease occurred were visited, disinfectants supplied as required, and measures taken to prevent the attendance at school of pupils from houses in which cases have arisen, insanitary conditions when discovered were removed, and cases which could not be isolated at home were promptly sent to hospital.

Inspection.—The Medical Officer of Health has visited the District from time to time, and besides investigating cases of infectious disease, has made general and special inspections. He has advised his Authority on many matters of detail in connection with these inspections.

Water-supply.—Part of the District is supplied from the Chester Waterworks, part from Wirral Waterworks, and part from the Wrexham Waterworks, while other parts have good well water. Elsewhere the water is unsuitable or deficient in quantity. Christleton, Newton, and Upton are supplied from the Chester Waterworks. The extension of the Chester water mains to Great Boughton has been accomplished by private enterprise. Great Saughall, Capenhurst, and part of Mollington are now supplied from Wirral Waterworks. Dodleston, Eaton, and neighbourhood are supplied from the Wrexham Waterworks.

The arrangement mentioned in the 1902 Annual Report, for the supply of Mollington from the Chester water-mains, has been carried out. Futher extension is under consideration.

The District is traversed by a large conduit taking water from Vyrnwy to Wallasey, and a few houses in the District have been supplied therefrom. It may possibly become available for further supplies.

Sewerage.—The sewerage of Christleton is now completed, several connections of private drains have been made and others are being proceeded with. The lift which is to raise a small portion of the sewage has not, however, been finally tested, but it is expected it will soon be in operation.

The greater part of the sewerage of Great Boughton has been finished, and house connections have been made. The sewers of the northern part of the township have been laid, but are not yet provided with an outfall, the delay in this respect has occurred in consequence of the exceptionally bad ground which was met with on the line originally intended to be followed, so that an alteration had to be made, and fresh powers obtained for the new plan. It is hoped that the sanction of the Local Government

Board which has been applied for will be received shortly, so that the new outfall, which is to be laid in conjunction with the sewerage of Bache, Newton, and Upton, can be proceeded with without further delay.

The scheme for the sewerage of Bache, Newton, and Upton, has passed through many vicissitudes. In connection with it, an arrangement has been made between the Rural District Council and the Council of the City of Chester, which would probably have been proceeded with during the year, had not an application been made by the Hoole Local Board, or rather Urban District Council, for the enlargement, and joint use of the sewer, which would pass through Hoole. This caused a further delay, pending the settlement of an agreement regarding this new arrangement. It is hoped that whatever may ultimately be settled, this long required scheme may be proceeded with early in the present year.

Plans have been got out for dealing with the sewage of Great Saughall, and a public meeting has been held there to consider the matter, but no further action has been taken.

Existing Sewers and Outfall Works.—Except in the immediate neighbourhood of Chester, the District is thinly populated. There are not many large villages and few sewers. Eaton and Eccleston are sewered, and have Outfall Works for the purification of the sewage by the Amines process. Works for the purification of the sewage at Pulford with septic tanks and bacteria beds, were provided during 1901. These were all constructed, and have been maintained by the owner of the estates.

Refuse Removal.—Throughout the District most of the houses have ash-pit privies, the contents of which at longer or shorter intervals are emptied on land. The District Council have aimed at getting these privies modified, so as to approximate, as much as possible, to earth closets, and much has been done in this respect.

The Authority contract for the removal of ash-pit refuse in the Township of Newton.

Inspector's Report.—The Inspector, Mr. Owen, continues to perform his duties with energy and ability. He makes a very complete report on the work done during the year 1905. He reports that 30 formal Notices were issued for the sanitary amendments of houses, premises, etc. The drains of 18 houses were repaired and put in good order. On 15 occasions accumulations of manure or other refuse were removed.

Dairies and Cowsheds to the number of about 100 have been under inspection during the year.

Factory and Workshop Act.—Seven bake-houses were inspected twice during the year, and found in order. In addition to the bake-houses, there are 13 workshops or work places on the Register. They are principally Brickworks, Builder's yards, or Blacksmiths, and in 6 cases action has been taken to provide separate sanitary accommodation.

Slaughter-house.—The only slaughter-house in the District has been under supervision.

New Houses.—During the year plans were passed for 26 new houses. Plans for the erection of 80 new houses at Tarvin Bridge were also sent in, but owing to the approach being insufficient they were objected to.

Bye-laws.—The model bye-laws of the Local Government Board, with respect to new buildings, are in force throughout the District. Mr. Cecil Davies is Surveyor to examine plans submitted and see that the Bye-laws are carried out.

CONGLETON

Rural District.

Medical Officer of Health—Dr. C. H. Wentworth-Bennett.
Population at Census, April 1st, 1901—12,220.
Estimated Population in middle of 1905—12,220.
Area in acres—40,152.
Birth-rate per 1,000 living—28.1.
Death-rate per 1,000 living—11.8.
Death-rate from seven principal Zymotic Diseases—0.5.
Deaths under one year to 1,000 births—78.

The population of Congleton Rural District was 12,505 at the Census in 1891, and 12,220 at the Census in 1901. The decrease in the population during the decennium—1891-1901 was thus 285. The estimate of the population made for the middle of the year 1903 assumes that there has been no increase since the Census.

Congleton Rural District.

The whole District for registration purposes has been divided into three sub-districts. They are as follows :—

1.—Church Hulme, having an area of 14,910 acres, includes Goostrey-cum-Barnshaw, Blackden, Twemlow, Cranage, Leese, Cotton, Church Hulme, Swettenham, Kermincham, Brereton-cum-Smethwick and Davenport.

2.—Congleton, having an area of 7,885 acres, includes Somerford, Somerford Booths, Hulme Walfield, Newbold Astbury, and Moreton-cum-Alcumlow.

3.—Sandbach, having an area of 17,357 acres, includes Smallwood, Odd Rode, Church Lawton, Hassall, Betchton, Wheelock, Arclid, Bradwall, Tetton, Moston and Elton.

The birth-rates of these three sub-districts are respectively 27.7, 28.8, 29.4. The death-rates of these three sub-districts are respectively 10.6, 10.8, 12.4.

In 1905 the number of births registered in the whole District was 344, and the number of deaths registered in the whole District (excluding 14, which took place in the Workhouse or other Public Institution, belonging to Congleton Borough, Sandbach, Buglawton and Alsager Urban Districts) was 145. The birth-rate is about 0.5 below the average in the District in 1895-1904, and the death-rate is about 2.5 below the average in the same 10 years.

Infant Mortality.—There were 78 deaths of infants under a year old, a number which is equal to 78 per 1,000 births in 1895-1904.

The deaths of infants under a year old were equal to 106 per 1,000 births.

Cases of Infectious Disease notified.—There were 47 cases of infectious disease notified in 1905, viz. :—11 diphtheria, 24 scarlet fever, 1 enteric fever, and 11 erysipelas. All these cases were treated at home.

Zymotic Mortality.—There were 6 deaths from the principal zymotic diseases, viz. : 1 measles, 1 scarlet fever, 1 diphtheria, and 2 diarrhœa.

Diphtheria.—There was 1 case of diphtheria in Congleton Sub-District, and 1 in Church Hulme Sub-District, the remaining 9 were all in Sandbach District.

Bacteriological Diagnosis.—Arrangements have been made with Professor Delépine to have specimens from doubtful cases of diphtheria examined bacteriologically.

Antitoxin.—The District Council has given permission to the Medical Officer of Health to supply antitoxin free for injection, as a preventative, where families are unable to afford it.

Scarlet Fever.—Of the 24 cases notified, 22 were in Sandbach Sub-District, 1 was in Congleton Sub-District, and 1 in Church Hulme Sub-District.

Action taken to prevent Spread of Infection.—In all cases of infectious disease notified the premises are promptly inspected. Pamphlets are distributed giving full instructions as to isolation and disinfection, and disinfectants as required are supplied free of charge.

Isolation Hospital Accommodation.—The Hospital at Arclid has been during 1903, 1904 and 1905 reserved for small-pox only. The new arrangement of having a permanent caretaker there is a great improvement.

The provision of an Isolation Hospital for cases other than small-pox is still under consideration. It will be provided jointly by Congleton Borough and other Urban Districts, and Congleton Rural District

Water-supply.—Holmes Chapel is in need of a good supply. Rode Heath and Thurlwood will be much benefited by the scheme at present before the District Council, if it be carried out. Except for these places, the District is well supplied with water.

It was mentioned in the Report for 1903 that water had been supplied to the Parish of Lawton by the North Stafford Company.

Factory and Workshop Act.—The premises required to be inspected under this Act are very few. They have been inspected and found clean and well ventilated, with sufficient air-space and satisfactory sanitary conveniences. Efficient means of exit are provided in case of fire. There are no underground bake-houses in the District. Any suggestions made to the occupiers have always been complied with.

Slaughter-houses have been inspected. They have been found clean and in order. No nuisance has been caused by a slaughter-house.

Sewerage and Irrigation Grounds.—The new sewers at Elworth and Rode Heath, constructed in 1901, have proved of much benefit to the Districts they serve. The Medical Officer of Health again draws the attention of his Council to the great need of drainage at Thurlwood, and also at Kent Green. The improvement effected in the drainage of Holmes Chapel some time since has not been well maintained, and as a result a nuisance was created. However, since the District Council engaged a man to look after the Outfall Works, they have been doing satisfactorily. The Irrigation Grounds at Mow Cop, Mount Pleasant, and Lawton, are working well.

Refuse Removal.—This scavenging has been well attended to during 1905. It is supervised by the Inspector.

Common Lodging-houses, of which there are 6, have been kept under supervision and are in order.

Canal Boats.—The Inspector reports that he has visited and inspected 80 Canal Boats. In one instance a boat was found to be overcrowded, and in another a case of infectious disease was noted on board. This case was promptly removed to a cottage, till recovery, after which the cottage was cleansed and disinfected.

DISLEY

Rural District.

Medical Officer of Health—Dr. C. J. Bennett.
Population at Census, April 1st, 1901—2,827.
Estimated Population in middle of 1905—3,100.
Area in acres—2,466.
Birth-rate per 1,000 living—19.6.
Death-rate per 1,000 living—14.1.
Death-rate from seven principal Zymotic Diseases—0.3.
Deaths under one year to 1,000 births—8.2.

The population of Disley Rural District was 2,827 at the Census in 1901, and the population of the same area was 2,260 at the Census in 1891. The increase in the population during the decennium 1891-1901 was thus 567, that is slightly over 25 per cent. The estimate of the population made for the middle of 1905 is 3,100. During 1905 the number of births registered in the District was 61, and the number of deaths registered in the

District was 44. The birth-rate is about 4 below the average death-rate in Disley in 1895-1904, and the death-rate is about equal to the average death-rate in Disley in 1895-1904.

Among the registered deaths only 1 is due to zymotic disease, viz. :—diphtheria. Three deaths were due to cancer, 12 to bronchitis, pneumonia, or other disease of respiratory organs, 3 to alcoholism or cirrhosis of the liver, 4 to heart diseases and 2 to accidents.

Cases of Infectious Disease notified.—There were 14 cases of infectious disease notified, viz. :—3 diphtheria, 7 scarlet fever, 1 enteric fever, and 3 erysipelas. These cases were investigated, and isolated as far as possible, at home.

Diphtheria.—The outbreak of this disease occurred among the children attending the Disley school, and one of the three cases proved fatal. The drains of the school were examined and found to be very defective. The defects noted were promptly remedied. This school was insufficiently ventilated, neither the school-house nor the closets belonging thereto were clean. The Medical Officer of Health advised that the premises, furniture, and books, should be thoroughly disinfected and cleansed. This advice was taken, the school of course being closed while the work was going on.

Scarlet Fever.—The infection of this disease was introduced from New Mills, an adjoining District, and spread through many of the children attending school.

Enteric Fever.—This case in the opinion of the Medical Officer of Health, was associated with a most insanitary privy serving the premises.

Isolation Hospital Accommodation.—In the last Annual Report it was noted that satisfactory arrangements had been made with Hyde Corporation, under which cases of infectious disease from Disley can be treated at Hyde Isolation Hospital. It is now stated that there is no Isolation Hospital Accommodation.

Water-supply.—The District is almost wholly within the water-supply limit of the old Stockport Waterworks Company, which undertaking was acquired about five years ago by the Stockport Corporation. During the summer of 1904, as in other years, the supply was usually turned off at night, causing considerable inconvenience. This is a most undesirable practice, and should not occur. Arrangements

should be made with the Stockport Corporation, so that it may never be necessary to turn off the water. Further waterworks are being constructed in the Kinder Watershed, which will enable the Corporation to improve their supply. The new water-main between Kinder and the Stockport Reservoir is at present being laid, so that in future Disley will have an abundant and pure water-supply. Furness Vale is within the limits of the supply of the Corporation of Stockport, so that this area also, may reasonably expect to have an excellent water-supply shortly.

Wood End Farm, Higgin's Farm and Widowhurst Farm, have now a good supply of water, which is conveyed in pipes from Lyme Park Reservoir.

Dairies and Cowsheds.—The Inspector has made a Report on the dairies and cowsheds in the District, and this Report is at present under consideration. There are in all 44 premises reported on.

The Medical Officer of Health is of opinion that, considering the climate of Disley, and the exposed position of many of the dairy farms therein, 500 cubic feet of air space per cow (or at most 550) is amply sufficient.

New Houses.—Twenty-one new houses were erected in 1905, 12 of which are now tenanted. The number of houses at present in the District is 659.

Improved Building Bye-laws Needed.—The revision of the building bye-laws, so as to bring them into conformity with Model Bye-laws of the Local Government Board has been under consideration, but the work is not completed. Improved bye-laws are much needed.

Urban Powers.—The District Council has obtained an order from the Local Government Board, under Section 297 of the Public Health Act, 1875, conferring Urban Powers which will enable them to make bye-laws with respect to (a) new streets, buildings, air space, drainage, etc.; (b) prevention of nuisances, etc.; and (c) the regulation of slaughter-houses.

Public Health Acts (Amendment) Act, 1890.—The District Council have also adopted certain sections of this Act.

The Factory and Workshop Act.—This Act is receiving attention. All the Factories and Workshops in the District are properly inspected. On two occasions, in 1905,

defects were observed, and after notices had been served both were remedied. Six new closets have been built at Waterside Mill and 4 at the Albert Works.

Sewerage and Drainage.—The sewerage of Disley, recently completed, works well, and the treatment at the outfall is effective. The property connections to the sewer should be pushed forward and completed as soon as possible; otherwise the pollution of the stream running through the village will continue.

Need of Sewerage at Furness Vale.—The Medical Officer of Health draws attention to the condition of Furness Vale, which is still without a proper system of sewerage and sewage disposal, and urges his Authority to provide the same.

Need of Sewerage at Newtown.—Attention is also called to the necessity of dealing with the sewage of the Newtown end of the District. The population is increasing here, and main drainage is much needed.

Inspector's Report.—Mr. H. Curtis, the Inspector, reports that during the year the pollution of the brook running through the village has received special attention. The emptying of ashpits and pail closets has been carefully supervised. The pails are emptied fortnightly. On 9 premises the drains have been repaired and put in order. Nuisances discovered or complained of have been abated.

Refuse Removal.—Since November, 1900, the District Council have taken in hand the emptying of ashpits. A new tip has been obtained. The work has been well done, and the sanitary condition of the District has been improved by the change. During the year 554 emptyings were effected.

Slaughter-houses are periodically inspected by the Inspector.

MACCLESFIELD

Rural District.

Medical Officer of Health—Dr. J. L. Rushton.
Population at Census on April 1st, 1901—15,775.
Estimated Population in middle of 1905—16,408.
Area in acres—79,572.
Birth-rate per 1,000 living—21.2.
Death-rate per 1,000 living—15.2.
Death-rate from seven principal Zymotic Diseases—0.18.
Deaths under one year to 1,000 births—103.

The population of this Rural District was 15,775 at the Census in 1901, and the population of the corresponding area was 15,896 at the Census in 1881. The decrease in the population during the decennium, 1891-1901, was therefore 121, that is 0.76 per cent.

The whole District has, for registration purposes, been divided into six sub-districts. These are as follows:—

1.—Alderley, having an area of 13,679 acres. It includes Birtles, Capesthorne, Lower Withington, Old Withington, Chelford, Snelson, Nether Alderley, Over Alderley, Great Warford, and part of Chorley.

2.—Bollington, having an area of 7,017 acres. It includes Tytherington, Pott Shrigley, Lyme Handley, and part of Hurdsfield.

3.—Gawsworth, having an area of 17,983 acres. It includes Gawsworth, Bosley, North Rode, Marton, Siddington, Henbury-with-Pexall, and Eaton-by-Congleton.

4.—Prestbury, having an area of 13,666 acres. It includes Prestbury, Poynton-with-Worsh, Woodford, Newton, Adlington, Butley, Mottram, St. Andrew, Fallibroome, and Upton.

5.—Rainow having an area of 14,274 acres. It includes Taxal, Kettleshulme, Rainow, and Macclesfield Forest.

6.—Sutton, having an area of 12,953 acres. It includes Wildboarclough, Wincle, and part of Sutton.

The number of births registered in the whole District was 349. The number of deaths registered in the whole District was 211, but to the latter should be added 39 deaths of persons belonging to the Rural District who died in the Union

Workhouse, Infirmary, or in the Asylum, in the Borough of Macclesfield. Thirty-six of those who died were infants under a year old.

Cases of Infectious Diseases.—The number of cases of infectious disease notified was 79, viz.:—7 diphtheria, 59 scarlet fever, 8 enteric fever, and 5 erysipelas. As there is no hospital for infectious diseases other than small-pox, these cases were all treated at home.

Zymotic Mortality.—The number of deaths from the principal zymotic diseases was 3, viz.:—1 diphtheria, 1 scarlet fever, and 1 enteric fever. The zymotic death-rate was therefore 0.18—a very low rate even for a Rural District. There were also 2 deaths from epidemic influenza.

Small-pox Isolation Hospital.—During the latter half of the year 1902 a temporary hospital for small-pox was erected in Greenway, Sutton. This was completed, and furnished, and ready for use about the middle of October. A few weeks later it proved of great use for the isolation of five cases of small-pox, which occurred in the Workhouse Infirmary late in 1902. The site is at an altitude of 1,250 feet, and the building is so well constructed that it was not damaged by the gales and severe frosts of 1902-3. Water is supplied by means of a hydraulic ram, which has worked satisfactorily since it was started. It sends up an ample supply of excellent water 260 feet high, through 630 yards of pipes.

This hospital was used in 1904 for the isolation of a case of small-pox which occurred at Langley. The patient did well, and the Hospital was closed on October 6th. The Hospital was kept in readiness in 1905, but fortunately it was not required.

Measles and Whooping-cough were prevalent more or less throughout the District in 1905. It was found necessary on account of the prevalence of these ailments, and occasional outbreaks of other infectious diseases, to close schools in various townships for periods varying from 2 to 6 weeks.

School-closure.—In thinly populated Districts where children meet seldom, except at, or on the way to school, there is no doubt that school closure is efficacious in checking the spread of disease. In one instance, a school was closed owing to a child attending whilst in the peeling stage of scarlet fever. Cleansing and disinfecting of the school of course followed the closure.

Tubercular Disease.—There were 10 deaths from phthisis, and 11 from other tubercular diseases. Thus the death-rate from phthisis was equal to 0.6 per 1,000 living, and the death-rate from all tubercular diseases was equal to 1.28 per 1,000 living.

The Medical Officer of Health finds that the infectious character of phthisis is still not sufficiently recognised, and that ventilation and disinfection (as preventive measures) receive scant attention. In many instances, owing to financial reasons, it is impossible to isolate the patient, or to remove him to a sanatorium for consumptives; but much might be done in properly disposing of the infectious expectoration, the disinfection of clothes, drinking vessels, etc., and, above all, by insisting on plenty of fresh air.

Action taken to Prevent Spread of Infection.—On receipt of a certificate notifying infectious disease, the Medical Officer of Health visits and examines the premises, gives instructions to competent persons, so that they may adopt all available means to prevent any extension of the disease. The source of water-supply and milk-supply are investigated, and frequently dairy cattle are inspected. Sulphur for fumigation and other disinfectants are supplied.

Isolation Hospital Needed.—"Much expense and friction might be spared by the provision of an Isolation Hospital. In many cases it is almost impossible to provide complete isolation in an ordinary dwelling, and, in consequence, the risk of further infection is greatly increased."

The only Isolation Hospital at present provided is the temporary building already referred to, for the accommodation of small-pox cases.

Report of Surveyor and Inspector.—Much information is furnished by Mr. Jas. Thorp's Report as to matters coming under his supervision. From this it appears that a large amount of work has been done.

Water-supply.—The proposal to purchase water under the provisions of Section 61 of the Public Health Act, 1875, from the Macclesfield Corporation, and to distribute it in several Townships in the District, was the subject of an official Inquiry by a Local Government Board Inspector during the year 1903, and on receipt of the Board's sanction the work was at once taken in hand. There have been 3,395 yards of water-mains laid in the Townships of Upton, Fallibroome, Prestbury, Butley, and Tytherington. On the completion of the works, copies of the Regulations, scale of charges, and

forms of application for a supply were sent to the owners of every house *en route*. Where there was dilatoriness on the part of owners in availing themselves of the supply, Statutory Notices were served. The water is now in use at every house *en route* except two, which have private supplies of a satisfactory character. At Upton, 36 houses have been supplied, at Prestbury 34 houses, at Butley 49 houses, at Tytherington 23 houses, and at Taxal 73 houses. Of all these houses 22 were newly supplied in 1905. In Poynton 20 additional houses were supplied from Lord Vernon's water mains, making a total of 506 houses in Poynton. In Chorley 12 additional houses were supplied from the Stockport Corporation water mains, making a total of 39 in this Township. In Sutton, Mr. Whiston's water mains were extended, to convey water to 2 new houses in Coalpit Lane. His water mains now convey water to 100 houses.

In May, several cases of typhoid fever were notified from Sutton Lane Ends. The water supply of this locality is undoubtedly deficient. Upwards of 50 houses are more or less dependent upon a dip-well, the inflow to which in dry seasons diminishes to less than 100 gallons in 24 hours. It was proposed that water should be purchased under Section 61 of the Public Health Act, 1875, from the Macclesfield Corporation. This water is not under sufficient pressure for distribution throughout the neighbourhood. It was further proposed to raise it by means of a hydraulic ram driven by impure water to a service reservoir high enough for such purpose. Provisional Agreements were made for the supply under Section 6, for water required for driving the ram, and for sites for the ram and reservoir. These proposals were submitted by the Township representative to a Township meeting, at which they were rejected because the undertaking would not at once be self-supporting, and aid from the local rates would be required, though it is estimated that this aid would amount to less than one penny in the £. To meet this objection as far as practicable appeals were made to the owners of the properties which would benefit by the undertaking to contribute to the costs of it, but not a single offer to contribute was made. The Surveyor has since been instructed to prepare plans and estimates of these proposals, preparatory to application being made to the Local Government Board for sanction to borrow the sum required for the works mentioned.

During 1905, 7 samples of water were taken for analysis. One of these was reported by the Analyst as unfit for domestic use, and steps were at once taken to prevent the water represented by the sample from being used for domestic purposes.

Eleven certificates for 43 houses were granted under the provisions of Section 6 of the Public Health (Water) Act, 1878.

Sewerage at Poynton.—Sixteen houses were, during the year, newly drained into the sewers at Poynton. The number of houses now drained into these sewers is 476.

At the Sewage Disposal Works a collecting tank was built to receive the effluents from the precipitation tanks, and the contents of this collecting tank are discharged by means of an automatic syphon on to the irrigation land, intermittently. By this process the tank effluent is distributed over a wider area when the flow of sewage is small, and the soil is aerated between the doses.

Effluent Outfalls.—All outfalls where sewage-disposal works discharged into streams in the Rural District have been inspected at intervals throughout the year, to see they were in order.

New Houses.—Thirty sets of plans for new buildings were submitted and approved in accordance with the requirements of the Bye-laws with respect to new buildings and to new streets. The buildings comprise 58 dwelling-houses and 3 factories or workshops. The buildings and other works were visited frequently during construction or execution, to see that the Bye-laws were being complied with.

Houses Unfit for Habitation.—Three houses unfit for habitation were brought under the notice of the Authority. They were vacated without the service of a statutory notice. Of these 2 were re-built.

Damp Houses.—Five houses which were so damp as to be injurious to the occupants, were effectively dealt with so as to make them healthy habitations.

New Building Bye-Laws—As stated in the Annual Report for 1903-4, the Bye-laws with respect to new buildings which were in force in ten only out of 37 Townships, have been repealed, and new bye-laws, which are much more suitable to a sparsely populated District, have been adopted, and are now in force in every Township. Copies of these, with an explanatory circular, have been distributed to owners, agents, architects, and builders.

Dairies and Cowsheds.—During 1905 there were 10 persons newly registered under the Dairies, Cowsheds, and Milkshops Order. At the end of 1905, there were 394 persons registered. Most of the premises were visited during the

year. They were usually found in satisfactory order as regards cleanliness.

Slaughter-houses were visited at intervals, and were found clean and in good order.

Factory and Workshop Act.—Under this Act, visiis of inspection have been made to the known factories and workshops in the District. In particular, inspections have been made of 6 factories (including factory laundries), three workshops (including workshop laundries), and 31 home workers' premises. At one factory the sanitary accommodation was found to be insufficient. Adequate accommodation was ordered to be provided, and the directions given were carried out.

Nuisance Abatement.—During the year there were 22 Statutory Notices served for the abatement of nuisances, for the provision of water supply, or efficient drains. The abatement of a large number of nuisances was obtained without formal notice. In no instance were further legal proceedings taken. There were 56 inlets to drains trapped, 21 houses were newly drained, and many other nuisances, arising from obstructed drains, inefficient disposal of drainage, the keeping of animals, and accumulations of house refuse were abated.

Canal Boats.—Under the Canal Boats Act, 29 boats were inspected during 1905. The boats were registered for 88 adults, and they carried 54 men, 7 women, and 6 children. In no case was any defect noticed.

MALPAS

Rural District.

Medical Officer of Health—Dr. G. A. Kenyon.
Population at Census on April 1st, 1901—4,488.
Estimated population in middle of 1905—4,436.
Area in acres—21,406.
Birth-rate per 1,000 living—23.7.
Death-rate per 1,000 living—12.8.
Death-rate from seven principal Zymotic Diseases—0.
Deaths under one year to 1,000 births—47.

The population of Malpas Rural District was 4,488 at the Census in 1901. The population of the same area was 4,624 at the Census in 1891. The decrease in the population during the decennium 1891-1901 was therefore 136, that is, nearly 3 per

cent. The estimate of the population made for the middle of the year 1904 is therefore a little lower than the population at the last Census.

The Rural District includes the following townships (civil parishes):—Bickley, Hampton, Larkton, Duckington, Edge, Overton, Malpas, Chorlton, Cuddington, Oldcastle, Newton-by-Malpas, Stockton, Wyclough, Wigland, Agden, Childlow, Bradley, Macefen, Tushingham-with-Grindley, Wirswall, Marbury-with-Quoisley, Norbury, and Threapwood.

In 1904 the number of births registered in the District was 105, and the number of deaths registered in the District was 55. To the latter must be added the deaths of two residents who died in Institutions beyond the District, making the deaths of persons belonging to the District 57. The birth-rate is 0.8 below the average in the 9 years 1896-1905, and the death-rate is 1.0 below the average in the same 9 years.

Five of those who died were infants under a year old, and 24 of those who died were persons upwards of 65 years of age.

There was no death from any of the principal zymotic diseases. There was one death from enteritis, 1 from alcoholism or cirrhosis of the liver, and 1 from premature birth. There were 5 deaths from phthisis, 4 from cancer, 2 from bronchitis, 6 from pneumonia, and 9 from heart diseases.

Cases of Infectious Disease Notified.—There were 25 cases of infectious disease notified, viz.:—23 scarlet fever, 1 puerperal fever, and 1 erysipelas. The cases were isolated, as far as practicable, at home.

Scarlet Fever.—Twenty-three cases occurred, mostly in August and September after the midsummer holidays. Schools were promptly closed, and the outbreak was confined to 9 houses, which were subsequently disinfected.

Joint Hospital District Fund.—In order to provide Hospital accommodation for cases of infection for this District and the neighbouring Districts of Tarvin and Tarporley, application was made late in 1902 to the Local Government Board to form the three Districts into a Joint Hospital District. The official Inquiry was held in February, 1903, and the Order constituting the Joint Hospital District and Board has since been issued.

The work of providing a Hospital has been delayed owing to the difficulty experienced in obtaining a suitable site. A site has been found, and the Medical Officer has reported upon it favourably, but the owner is unwilling to dispose of it. It is proposed to petition the Local Government Board to issue a Pro-

visional Order enabling the Joint Hospital Board to obtain the land otherwise than by agreement.

Provision for the Isolation of Small-pox.—The 3 tents, mentioned in the last Annual Report as having been purchased for the treatment of small-pox cases, have been sold.

Malpas has entered into an arrangement with other parts of the Whitchurch Union and thus secured accommodation for the isolation and treatment of small-pox cases.

Inspection.—The Medical Officer of Health has from time to time inspected the District, and given advice on various matters of detail.

Water-supply.—The supply to the town of Malpas and to the township of Bickley is from the Liverpool mains, but it is intermittent, being turned off at night. Elsewhere the supply is less satisfactory, being from wells liable to pollution.

An improvement was effected during 1903 in the water-supply of Marbury, by the Lord of the Manor. Water was brought from some distance for the supply of the school and adjacent houses. This is supplementary to the supply brought to the village in 1902.

New Houses.—Twelve cottages are being built at Malpas (town), under the provisions of Section 3 of the Housing of the Working Classes Act.

Refuse Removal.—The disposal of excreta is chiefly by combined ashpit-privies, the contents of which are removed from time to time and disposed of on land.

Malpas Outfall Works.—In the town of Malpas are a number of water-closets. The town is sewered to three outfalls, and at two of them the sewage is treated in bacteria beds, arranged in two tiers.

Inspector's Report.—The Inspector, Mr. Chubb, gives attention to all complaints, and endeavours to obtain abatement of all nuisances reported or discovered, and the cleansing of dirty premises. He states that 80 houses, premises, etc., were inspected, and 27 notices issued for the sanitary amendment of premises. The drains of nine houses were cleansed or repaired, 4 new closets were provided, 11 houses were provided with new water-supply, 5 accumulations of refuse were removed.

Overcrowding.—Four cases of overcrowding were dealt with during the year.

Factory and Workshop Act, 1901.—There were 88 inspections of workshops made under this Act, and on no occasion was any defect noticed. There are 24 workshops on the register, including 7 bake-houses.

Common Lodging-houses.—The three lodging-houses in the District have been inspected.

Dairies, &c., are visited. Model regulations have been in force since March 1st, 1900.

Slaughter-houses are inspected from time to time. There are six in all, but they are neither licensed nor registered.

NANTWICH

Rural District.

Medical Officer of Health—Dr. R. T. Turner.
Population at Census, April 1st, 1901—23,197.
Estimated Population in middle of 1901—23,376.
Area in acres—98,466.
Birth-rate per 1,000 living—25.1.
Death-rate per 1,000 living—12.1.
Death-rate from seven principal Zymotic Diseases—1.0.
Deaths under one year to 1,000 births—88.

The population of this Rural District was 23,197 at the Census in 1901, and the population of the corresponding area was 22,912 at the Census in 1891. The increase in the population during the decennium 1891-1901 was thus 285, that is 1.23 per cent. The estimate of the population made for the middle of the year 1905 is certainly not excessive.

The whole District, for registration purposes, has been divided into 4 sub-districts. These are as follows:—

1. Crewe, having an area of 31,154 acres, and an estimated population of 11.056. It includes Warmingham, Haslington, Barthomley, Crewe (taking in Crewe Green), Willaston, Weston, Basford, Rope, Stapeley, Walgherton, Wybunbury, Hough, Chorlton, Lea, Blakenhall, Checkley-cum-Wrinehill, Bridgemere, Hunsterson, Doddington, Hatherton, Batherton, and parts of Coppenhall Church, Shavington-cum-Gresty, and Wistaston.
2. Nantwich, having an area of 21,300 acres, and an estimated population of 3,468. It includes Coole Pilate, Austerson, Baddington, Edleston, Burland,

Faddiley, Brindley, Acton-by-Nantwich, Henhull, Hurleston, Poole, Stoke, Cholmondeston, Aston-juxta-Mondrum, Worleston, Woolstanwood, Leighton, and Minshull Vernon.

3. Bunbury, having an area of 22,113 acres, and an estimated population of 4,122. It includes Minshull Church, Wettenhall, Bunbury, Alpraham, Calveley, Bickerton, Bulkeley, Cholmondeley, Egerton, Wardle, Haughton, Spurstow, Ridley, and Peckforton.

4. Wrenbury, having an area of 23,899 acres, and an estimated population of 4,622. It includes Chorley, Wrenbury-cum-Frith, Woodcott, Broomhall, Dodcott-cum-Wilkesley, Sound, Audlem, Buerton, Hankelow, Baddiley, and Newhall.

In 1905 the number of births registered in the whole District was 589, and the number of deaths registered in the whole District (including 8 deaths of those belonging to the District which took place in the Workhouse in Nantwich Urban District, Manchester Infirmary, &c., and excluding 26 deaths at the Men's Hospital, Worleston, of those not belonging to the District) was 285. The birth-rate was 1.4 below the average in the District in the nine years 1896-1904, and the death-rate was 1.5 below the average in the District in the same 9 years.

The birth-rates for the four Sub-districts were respectively 27.4, 21.9, 20.6, and 26.1. The death-rates for the four Sub-districts were respectively 12.9, 10.0, 11.8, and 12.3.

Infant Mortality.—Fifty-two of the deaths were of infants under a year old. The causes of these deaths, entered in the Register, were as follows:—2 measles, 2 whooping-cough, 1 diphtheria, 7 diarrhœa, 1 tubercular disease, 6 bronchitis, 3 pneumonia, 3 premature birth, 1 heart disease, 2 accidents, and 23 all other causes.

The 52 deaths in 1905 are equal to 88 per 1,000 births. The deaths of infants under a year old during the nine years 1896-1904 were equal to 103 per 1000 births.

Deaths from Zymotic Diseases.—The number of deaths ascribed to the principal zymotic diseases was 24, being equal to a death-rate of 1.0 per 1,000 living. The 24 deaths were registered as follows:—3 measles, 1 scarlet fever, 6 whooping-cough, 4 diphtheria, and 10 diarrhœa. There was also one death from epidemic influenza.

Cases of Infectious Disease notified.—There were 155 cases of infectious disease notified in 1905, viz.:—14 diph-

Nantwich Rural District.

theria, 2 membranous croup, 123 scarlet fever, 3 enteric fever, 2 puerperal fever and 11 erysipelas.

The following tabular statement shows at a glance the cases of infectious disease notified in the District during 1896-1905, and the deaths therefrom.

Year.	Cases Notified.									Deaths.							
	Smallpox.	Scarlet Fever.	Diphtheria.	Membranous Croup.	Enteric Fever.	Puerperal Fever.	Erysipelas.	Total Annual Notifications.		Smallpox.	Scarlet Fever.	Diphtheria.	Membranous Croup.	Enteric Fever.	Puerperal Fever.	Erysipelas.	Total Deaths.
1896	...	109	9	8	4	2	:	132		...	6	6	8	1	2	...	23
1897	...	117	11	...	4	1	10	143		...	4	3	...	1	...	2	10
1898	...	94	16	4	14	...	14	142		...	4	1	1	5	...	1	12
1899	...	59	27	...	11	2	14	113		...	2	4	...	...	...	...	7
1900	...	164	9	3	9	1	15	201		...	5	2	1	2	...	...	10
1901	...	79	30	1	7	5	6	128		...	1	8	1	2	2	...	14
1902	...	20	73	...	4	2	9	110		...	...	13	...	1	...	...	14
1903	...	33	24	1	4	...	10	74		...	...	5	1	2	...	...	8
1904	...	79	5	...	4	3	18	110		...	...	...	...	1	1	2	4
1905	...	123	14	2	3	2	11	155		...	1	4	...	...	1	...	6

Nantwich Rural District.

Measles.—This disease was prevalent during the year, in several parts of the District. There was a sharp outbreak at Worleston in March and April, which necessitated the closure of the school. There was a sharp outbreak also in Stapeley and Hatherton, which necessitated the closure of the Broad Lane School.

Measles was registered as the cause of death of a child at Willaston in February, a child at Worleston in April, and a child at Hatherton in April.

Whooping-cough was epidemic on the north-west side of the District in the middle of the year, Six deaths occurred, respectively at Bunbury, Church Coppenhall, Shavington, Newhall, Weston, and Worleston. Three of those who died were under a year old, and all were under 8 years old.

Scarlet Fever.—The hundred and twenty-three cases notified were spread over 27 townships. In most instances the cases showed no particular tendency to spread. In Willaston, Shavington, Haslington, and Audlem there was at different times considerable prevalence. At Willaston the cases occurred during the earlier part of the year. The Medical Officer of Health could not at this time trace any infection to attendance at school. At Haslington there was a similar condition of affairs in the later months of the year. No clear evidence of school infection could be traced, but there was abundant evidence of great laxity in the village in the isolation of the affected children. At Audlem cases occurred chiefly during October, November and December, and there was clear evidence that infection was conveyed at school, the closure of the school was effected in December, a measure which immediately brought the outbreak to a close. At Shavington the incidence of the disease was practically the same as at Willaston and Haslington. The only death which occurred in 1905 was that of a child aged twelve months, which took place at Haslington in October. This is the first death from scarlet fever which has occurred since 1901.

Diphtheria and Membranous Croup.—Cases occurred during 1905 at Audlem, Coole Pilate, Acton, Crewe, Barthomley, Doddington, Haslington, Leighton, Willaston, Stapeley, Wistaston, and Worleston. Fourteen of the cases were reported as diphtheria, and 2 as membranous croup. In every case the sanitary condition of the premises was fully enquired into, and, if defects were found, they were as far as possible remedied. The occurrence of true cases of diphtheria at places widely separated, and without any apparent connection with previous cases, and in a considerable number of instances without any gross sanitary defects being discoverable, is difficult to explain.

The deaths from this disease number 4. They occurred respectively at Leighton, in February, at Haslington, in March, at Acton, in April, and at Audlem, in December. Those who died were all children under 14 years of age.

Diphtheria Antitoxin is, in the opinion of the Medical Officer of Health, of great benefit, especially if applied sufficiently early. Antitoxin serum is now within the reach of every one in the Rural District, as the District Council have instructed the Medical Officer of Health to keep and distribute a free supply of antitoxin for use in cases of necessity, and poverty, as a preventative of diphtheria, and as a remedial agent.

Enteric Fever.—Three cases were reported during the year. A man, aged 50, was notified on May 9th, from Church Coppenhall. He was a night-soil man in the employ of the Crewe Corporation, and may have been infected when at work. A young man, aged 28, was notified from Acton, on October 12th. It was difficult to account for this very clear case, as the young man had not been away from home for many weeks, and no case in the family or neighbourhood had occurred for years. He had been engaged a short time previous to his illness in emptying cesspools, and may have been thus infected. On Nov. 6th, a man, aged 40, was reported from the Workhouse Infirmary. It was clear that he had been infected before coming to the Workhouse. As he was not a rural resident, the Medical Officer of Health cannot give any account of his sanitary surroundings, previous to his admission. The case from Acton was removed to the Crewe Isolation Hospital, where he made a good recovery.

Puerperal Fever.—Two cases of this disease were reported during the year. They were as follows:—One, a woman at Wettenhall, aged 32, reported on May 1st; the other, a woman at the Workhouse Infirmary, aged 35, reported on July 2nd. The former case unfortunately proved fatal. In neither case was a registered midwife in attendance.

Erysipelas—Eleven cases of this disease were reported during the year. They occurred at Aston-juxta-Mondrum, Banbury, the Workhouse Infirmary, Haslington, Willaston, Shavington, and Wybunbury.

Diarrhœa was responsible for ten deaths. With three exceptions those who died were young children. The deaths occurred in the following townships:—Worleston, Weston, Shavington, Church Coppenhall, Newhall, Wrenbury, and Bunbury.

Schools.—The Schools at Worleston, Broad Lane, Bunbury, and Audlem were closed for short periods during the year on account of infectious outbreaks. The sanitary condition of a number of the older schools of the District is by no means perfect as yet, although a considerable improvement is noticeable in many of them, since the last Education Act came into operation. In one case the Medical Officer of Health had to threaten to report the insanitary condition of a school to the Education Department, if improvement was not effected. The improvement is now in a fair way for being carried out.

Phthisis.—The number of deaths from phthisis in 1905 was 19, being equal to about 0.8 per 1,000 living. In 1904, the phthisis death-rate was 0.6, in 1903 it was 0.3, in 1902 it was 0.38, in 1901 it was 0.6, and in 1900 it was 0.75.

Other Tubercular Diseases caused three deaths. All those who died were under five years of age.

Cancer.—There were 8 deaths from cancer, being equal to 0.34 per 1,000 living. This seems a fairly low death-rate.

Alcoholism.—Two deaths were ascribed to alcoholism or cirrhosis of the liver.

Uncertified Deaths.—Seven of the registered deaths were not certified by a Medical Practitioner, or made the subject of a Coroner's inquest. In accordance with the opinions expressed in the Registrar's Returns four of these deaths were probably due to heart disease, one was probably due to asthma, one was probably due to convulsions, and one was due to measles.

Coroner's Inquests.—During 1905 there were 24 inquests held. The causes of death, as certified by the Coroner were as follows:—Heart disease (2), apoplexy (3), burns (2), drowning (3), falls from carts (2), choleraic diarrhœa (1), suffocation (1), fall from train (1), bronchitis (1), imperfect inflation of the lungs (1), failure of circulation in lungs (1), inflammation of lungs (1), fracture of thigh (1), convulsions (1), suicides (3).

Preventing the spread of Infectious Disease.—The method of procedure on receipt of a notification of infectious disease is as follows:—On the same day intimation is sent to the Master or Mistress of the School attended by members of the family, and the exclusion from the school of all coming from the infected house is requested. At the same time a paper of instructions is sent to the head of the family, as soon as practicable

the houses is visited, the sanitary state of the premises noted, and steps are taken to remedy defects discovered. Advice is given to the head of the family, and disinfectants are supplied.

Isolation Hospital Accommodation.—Provision is made for the isolation of small-pox cases at the Small-pox Hospital at Ravensmoor. The Nantwich Joint Hospital Board have acquired this Hospital, and it is constantly kept aired, and in order for the reception of patients. Fortunately it was not needed during 1905. The new Hospital at Worleston, which is intended for the reception of scarlet fever, diphtheria, and enteric fever, was completed at about the close of the year. It will be furnished with as little delay as possible. It is to provide 20 beds for patients. During 1905 two cases were isolated at the Crewe Isolation Hospital, one being a case of scarlet fever from Doddington, and the other a case of enteric fever from Acton.

Disinfection.—In a few cases clothing and bedding have been disinfected at Crewe. The new Hospital is fitted with a good steam disinfector, which will shortly be in use, a man having been appointed by the Joint Hospital Board to manage it. In the disinfection of infected rooms reliance has been placed on the thorough washing of walls, floors, and ceilings with a good disinfectant, followed where possible by a thorough lime-washing.

Bacteriological Diagnosis.—Since the beginning of the year 1899, an arrangement has been in force by which specimens of blood from persons suspected of suffering from typhoid fever, and swabs from the throats of persons suspected of suffering from diphtheria, may be examined bacteriologically by Professor Delépine, of Manchester, at the expense of the District Council. This arrangement has been of the greatest value on many occasions.

Anthrax in Cattle.—A number of cases of anthrax have occurred among cattle, as in recent years. No cases of infection of human beings were reported in 1905.

Midwives.—The registered midwives of the District have been regularly visited and have been as far as possible instructed in their duties under the Midwives Act. A report has been sent to the County Medical Officer of Health. No doubt the supervision of these women will have a good effect.

Rivers Pollution.—The streams entering the District from the Staffordshire border are still much complained of. Their condition is at times very bad. The River Weaver is still much polluted by the sewage of Nantwich and Crewe, though to a less extent by the latter than in former years.

Nantwich Rural District.

Sanitary Administration.—Since August, 1903, the Sanitary Staff of the Council has been increased by the appointment of Mr. John Storey, as Inspector of Nuisances. Mr. J. A. Davenport, who for many years has held the combined offices of Surveyor and Inspector, continues to hold the office of Surveyor and Waterworks Engineer, and, in addition, is Inspector of Canal Boats, and under the Dairies, Cowsheds, and Milkshops Orders. The appointment of an Inspector has proved of great benefit, and has given opportunity for a much more prompt attention to sanitary conditions than was always possible in the past. It has allowed of much work being done in the matter of the inspection of dairies and cowsheds.

Reports of Surveyor and Inspector.—Much information is furnished by Mr. J. A. Davenport's Report and Mr. J. Storey's Report as to matters coming under their supervision. From these it appears that a large amount of good work has been done during the year.

Water-supply.—No water mains have been laid by the Rural District Council during the year 1905, but additional mains have been laid by private owners in Cholmondeley, 800 yards, and in Wettenhall, 1,810 yards, making together a total of 2,610 yards; this, if added on to the length of mains as stated in the last report, would make a total of 277,541 yards, or 157$\frac{3}{5}$ miles of mains laid in the Rural District. Mains laid by private owners prior to 1901 have not been included.

Seventy-eight additional houses have been supplied with water from the Council's mains during the past year, making a total of 4,110 houses supplied by mains in the District since 1879.

The consumption of water throughout the whole District during 1905 has been 65,771,000 gallons, and in addition to this 1,233,000 gallons have been supplied to Bickley, for the Malpas Rural District Council. The consumption per house per day for 1905 was 54.7 gallons, and the consumption per head of population per day was 10.4.

The pressures throughout the District has been generally satisfactory, and no complaints of any importance have been received.

With respect to projected waterworks, it seems that the question of the payment for water for trade purposes will have to be satisfactorily settled, before any great extension of new Waterworks can be entertained.

The Stapeley Waterworks are in good order, but the drought in 1905 was so great at times as to effect many

waterworks depending on rainfall, as these works are, and the reservoir had, at times, to be supplemented from the upper mains.

New Buildings.—Plans for one hundred and twenty-three new buildings in the District were passed by the Council in 1905. Of these, 88 were for new houses, 15 were new out-buildings, 13 were of alterations and additions, and 4 of schools and public buildings, 2 were of slaughter-houses, and 1 was a plan for a laundry. In all, 2,567 plans for new buildings have been passed in the District, since urban powers, in respect of new buildings, were conferred on the Authority in 1875. New houses, additions, etc., were inspected during erection and after completion.

No Common Lodging-houses are in this District.

Dairies and Cowsheds.—The re-inspection of dairies and cowsheds referred to in previous Reports has been in progress during 1905. The work has been pressed forward simultaneously with arrangements for the alteration of dairies and cowsheds in various parts of the District.

Forty-four re-inspections have been reported to the Council; of these, the Regulations have been duly carried out in 19 cases. Some improvements have been made in 10 cases, and nothing at all has been done in 15 cases. In the latter, in every case, the owners have promised to carry out the regulations in the present year.

The necessary requirements under the Dairies Order are going on on the estates of Lord Cholmondeley, Lord Combermere, Sir Delves Broughton, Captain Walthall, Mr. A. Starkey, Mr. Lloyd and others.

Plans have been received from some agents and letters from all of them, stating the progress of the work.

There are now 359 names on the Register of Cowkeepers, 13 having been added in 1905 and 30 taken off.

There is undoubtedly, with some, a certain amount of unwillingness to go to the expense of carrying out the Regulations. The Council would do well to insist upon their being properly carried out where this is the case, or else to let the law take its course. Fair progress is being made, but in many cases alterations requiring very considerable sums of money to carry out, are sure to require patience, perseverance and firmness.

Slaughter-houses.—Inspections of licensed and registered slaughter-houses have been made from time to time. Urban powers for the regulation of slaughter-houses have now been

obtained for the whole District, and new bye-laws have been prepared and approved by the Council. During 1904 these bye-laws were approved by the Local Government Board. All the townships belonging to the District are thus under the same bye-laws. The good effect is already apparent, and will be more so as time goes on.

The sanitary condition of slaughter-houses has been much improved in recent years. On very few premises, if any, is there now ground for reasonable complaint. All the slaughter-houses have been regularly inspected in 1905, and in many of them material improvements have been carried out. The main object has been to ensure that the premises have impervious floors, cement dados, and proper drainage. Four licenses were granted during the year.

Diseased Meat.—In this District it is usual for the Medical Officer of Health or Inspector to be asked by butchers to examine doubtful carcases, and it has been made widely known that this duty will be undertaken. Various carcases were examined by request during the year, and when unfit for food destroyed with the consent of the owners.

Early in the year the Medical Officer seized at Haslington two carcases of meat which were diseased and unfit for food. The Council subsequently ordered the prosecution of the butchers who owned them, and they were both convicted and fined.

Knackers' Yards.—During the year three Knackers' licenses were granted to applicants.

Abatement of Nuisances.—Statutory Notices have been served in respect of five premises for the abatement of nuisances, and in each case they have been complied with. A large number of informal notices were also served upon owners of property, and with satisfactory results.

Sanitary Survey.—The Inspector has made a sanitary survey of 263 dwelling-houses, situated in various parts of the District. Special attention was paid to the construction of the houses, means of drainage, out-offices, water-supply, etc. Where defects were discovered, they were brought before the notice of the persons responsible for their rectification.

Factories and Workshops.—The number of premises on the Register at the end of the year was 35. The number of inspections made was 56, and on five occasions the premises were found in an uncleanly state. Notices were served accordingly, and the premises were lime-washed.

Scavenging.—At Willaston, Shavington, Audlem and Haslington, contracts are made by the Council for the emptying of middens and ashpits. The work generally speaking has had due attention.

Public Lighting.—The public lighting of the townships of Audlem, Crewe, Acton, Willaston and Shavington, has been duly carried out. Shavington-cum-Gresty, at the close of the year, voted by a small majority of the rate-payers, the lighting of the township "a nuisance," and the lighting of this township, for the present, has been suspended.

Sewerage.—Considerable discussion has taken place with reference to the sewerage of the larger villages, and meetings of the Council and of the ratepayers have been held to discuss the question. In Haslington, a drainage area has been proposed, and in Willaston, works of a temporary nature, with a view to postponing a general scheme, have been suggested. What the ultimate result of all these discussions and meetings will be, it is hardly necessary to speculate upon, as probably some decisive action will shortly be taken.

Canal Boats.—Fifty-four canal boats have been fully inspected during 1905, forty-six of them conformed entirely to the requirements of the Canal Boats Act, and the regulations made thereunder. As regards the remaining boats there were eight infringements. There was an absence of certificate on board one boat; on another boat the certificate did not verify the owner; another boat required painting; on board six boats repairs were required. Not one of the boats was overcrowded. No reports of infectious disease on any of the boats were made. On three the certificates produced were dilapidated. No legal proceedings were taken or required in 1905.

In all cases complaints in connection with the regulations have been brought before the owners, and satisfactory replies received. Where boats have come under re-inspection it was found that the required improvements had been made. The Shropshire Union Canal Co. can be relied upon to carry out their promises in these matters, and owners now generally follow in their footsteps.

There were 30 women on the 54 boats inspected and 30 children, 20 being children between the ages of 5 and 12 years, and 10 being children of 5 years of age and under. On 7 boats there were women and no children, on 17 boats there were women and children, and on 27 boats there were men only on

board. Twenty-seven boats were the only homes of those occupying them, and 27 captains had homes in addition to their boats.

The Inspector is of opinion that some improvement in the fore-cabin of the narrow boats is required. The Local Government Board's Inspector, in his Report to the Board, suggests that it should be made "an offence to keep a child of school-age in a canal boat, except during holidays." This suggestion is worthy of full consideration. Generally, it may be said that in this Rural District a steady improvement is taking place in the canal boats.

NORTHWICH

Rural District.

Medical Officer of Health—Dr. H. E. Gough.
Population at Census, April 1st, 1901—22,073.
Estimated Population in middle of 1905—23,400.
Area in acres—54,310.
Birth-rate per 1,000 living—24 2.
Death-rate per 1,000 living—13.5.

Death-rate from seven principal Zymotic Diseases—1.0.
Deaths under one year to 1,000 births—111.

The population of this Rural District was 20,954 at the Census in 1891, and 22,073 at the Census in 1901. The increase of the population during the decennium 1891-1901 was thus 1,119, that is 5.34 per cent. The estimate of the population for the middle of the year 1905, does not appear to be excessive.

The whole District, for registration purposes, has been divided into four sub-districts. These are as follows :—

1.—Weaverham, having an area of 17,978 acres, includes Delamere, Eddisbury, Oakmere, Cuddington, Weaverham-cum-Milton, Crowton, Acton-by-Weaverham, Little Leigh, Barton, and Hartford.

2.—Northwich, having an area of 10,904 acres, includes Cogshall, Comberbach, Marbury, Marston, Wincham, Lostock Gralam, Peover Nether, Allostock, Anderton, Leftwich, and Winnington.

3.—Over, having an area of 12,475 acres, includes Marton, Darnhall, Eaton-by-Davenham, Little Budworth, Wimboldsley, Clive, Moulton, and unnamed areas, formerly detached parts of Marton and Over civil parishes.

4.—Middlewich, having an area of 12,953 acres, includes Davenham, Rudheath, Whatcroft, Bostock, Stanthorne, Sproston, Byley, Lach Dennis, and Kinderton.

The population of these four sub-districts, at the middle of the year 1905, is estimated to have been as follows :—

Weaverham	9,125
Northwich	8,105
Over	2,970
Middlewich	3,200

During 1904 the number of births registered in the whole District was 567, and the number of deaths registered in the whole District was 311. Two of the deaths were of non residents (occurring in the Isolation Hospital), and should be excluded, while 9 deaths of residents (which took place outside the District) should be included, thus the deaths belonging to the District were 318.

The birth-rate of the whole District is 5.7 per cent. below the average in 1895-1904, and the death-rate of the whole District is 0.5 below the average in the same ten years.

Illegitimate Children.—Twenty-seven of the children born were illegitimate, that is 4.76 per cent. In 1904 about 3 per cent. of the children born were illegitimate. Of the 27 illegitimate children born, 6 died in the course of the year. Fifteen of the illegitimate children born belonged to the Northwich Sub-district.

Infant Mortality.—Sixty-three of those who died were infants under a year old. That is equal to 111 per 1,000 births in 1895-1904. The deaths of infants were equal to 128 per 1,000 births. The infant mortality of 1905 compares favourably with that of recent years. It is remarkable that half of the deaths of infants occur during the first month of life, and more than a third during the first week. Premature birth accounts for 13 of the deaths, infectious disease for 3, diarrhœal diseases for 5, tubercular diseases for 6, lung diseases for 6, and wasting diseases for 16.

Zymotic Mortality.—The Medical Officer of Health remarks upon the difficulty of summing up the zymotic mortality for purposes of comparison. The question which diseases to include and which to exclude has not up to the present been satisfactorily settled. The advance of science shows that diseases which were formerly not considered infectious are now found to be so; diarrhœa is an example of this, and probably many cases registered as enteritis are cases of true zymotic diarrhœa. Again,

the septic diseases, including puerperal fever, are infectious, and even tubercular disease should come under this category.

The zymotic rates are usually calculated upon the seven principal zymotic diseases, which are—(1) small-pox, (2) measles, (3) scarlet fever, (4) diphtheria, (5) whooping-cough, (6) typhus or typhoid fever, and (7) diarrhœa. The number of deaths from these causes is 27, which gives a rate of 1.1 per 1,000.

Cases of Infectious Disease notified.—There were 125 cases of infectious disease notified in 1905, viz. :—44 diphtheria, 50 scarlet fever, 16 enteric fever, 1 puerperal fever, and 14 erysipelas. Of these 37 were isolated in Hospital, viz. :—11 diphtheria, 19 scarlet fever, and 7 enteric fever.

Diphtheria.—The type of this disease appears to have been exceptionally severe, as out of 44 cases notified 10 proved fatal.

The Sub-district of Weaverham suffered the most, 29 of the notifications and 7 of the deaths coming from that region, a large proportion. The townships of Barnton and Weaverham contributed the bulk of the cases.

The disease has become endemic throughout the District. During the middle of the year a small but virulent epidemic occurred in Sandiway District, the origin of which was unquestionably an unnotified case attending the Sandiway Schools.

There were twelve cases notified in two days, and 3 died either before or very shortly after the notifications were received, and all were children from 9 to 11 years of age; 3 were removed to the Hospital, including 1 fatal case. Some 18 days later another case was notified from Sandiway, which was removed to Hospital; after fifteen days another case was notified. As soon as the outbreak occurred, the Schools were closed and thoroughly disinfected. All houses where infected children resided were disinfected and regularly supervised, and all drains and cesspools cleansed and disinfected also. Sandiway and District remained free for 3 months after this; then 2 cases occurred in Cuddington and 1 in Marton, the latter proving fatal after removal to Hospital. After a period of 7 weeks another case occurred in Sandiway, which was removed to Hospital and proved fatal. This was at the close of the year.

The number of fatalities is exceptional, especially so when the ages of the children is taken into account, for age is a factor towards recovery, and in these days of antitoxin the percentage of deaths need not be so high. If only parents and guardians of children will call in a doctor when the "sore throat" first shows

itself, a death might be quite the exception, for antitoxin if given early and in sufficient doses is a specific, and very, very rarely would a child die of diphtheria.

Scarlet Fever.—The 50 notified cases were fairly widespread. There were 20 in Northwich Sub-district, 20 in Weaverham Sub-district, 9 in Over Sub-district, and 1 in Middlewich Sub-district. The disease was of a very mild type, and no deaths were recorded.

Measles.—Periodical epidemics of this disease swept over the District, and 5 deaths resulted therefrom.

The Infants' School, Comberbach, was closed for the period of 3 weeks in February, on account of an outbreak of measles. The closure was effective in stopping a spread of infection.

Whooping-cough was not extensively prevalent as far as can be judged, but it caused 3 deaths.

Isolation Hospital Accommodation.—The buildings at Marbury were in use up to October 1st, after which the new Joint Hospital at Leftwich was made use of. The Marbury Hospital was much used by other Districts. There were 12 cases of small-pox there (cases admitted in 1904) at the beginning of the year 1905. From January 1st to October 1st, there were 26 cases of infectious disease other than small-pox admitted, making a total of 38. Of these, 36 were discharged cured, and the remaining 2 proved fatal.

New Houses.—Plans for 46 new houses were passed in 1905, and for additions to 6 existing houses. Plans were passed for a new school at Barnton, and for additions to 3 other schools at Barnton, Comberbach, and Weaverham.

In the Rural District there is a demand for good cottages, the present ones are often much overcrowded, many are small, insanitary, and very damp. Condemnation of them is useless, because it does not lead to reconstruction, which does not pay. They become derelict, and are demolished, and the tenants have nowhere to go, except to the towns, which means loss of employment.

Housing of the Working Classes.—The Medical Officer of Health remarks that:—

Under part III. of the Housing Act of 1890, Rural District Councils have power (after enquiry by the County Coun-

cil) to acquire land compulsorily, as provided in the Lands Clauses Consolidation Act, 1845, and no leases, settlement, entail, or other private agreement can debar them.

They can acquire land either inside or outside the District, at the "fair market value," with an allowance (generally 10 per cent.) for compulsory purchase.

In dispute a single arbitrator appointed by the Local Government Board has the settling of the matter.

The Rural or Urban District Council having acquired land may either lease it to companies, builders, or working-men, for the erection of workmen's dwellings. They may themselves erect lodging-houses, cottages, or block tenements, or they may purchase and improve, or re-construct, existing lodging houses, dwellings, or cottages, or they can provide gardens.

Why should they not? That there is need for houses for the people is self-evident, and if only the people knew that this power was in their hands they would soon demand its exercise; let us hope that they soon will know, and end the overcrowding in small insanitary dwellings which so many are compelled to put up with for want of anything better.

Houses Unfit for Habitation.—During 1905 there were 11 houses condemned by the Medical Officer of Health as unfit for human habitation. Four of these were in Lostock Gralam, and 7 in Weaverham. Of these 2 have been demolished, and replaced by 3 new houses, 2 have been repaired, and 7 are in course of re-construction.

Factory and Workshop Act.—There are 123 factories and workshops on the Register, of which 25 are bakehouses. There is only 1 underground bakehouse in the District. All the 123 premises have been regularly inspected and kept in order. During the year 22 notices were issued with reference to insanitary conditions, and the requirements made have since been carried out.

Water Supply.—There are public water-supplies at 23 townships. These have been maintained in a high state of efficiency.

At Bostock, a supply has been established for the Village, at the cost of the property owner, the water being pumped by a windmill into an elevator service tank.

At Barnton there has been considerable extension of the water mains, and larger pumps have been fixed for increasing the supply.

Northwich Rural District.

Analysis of 11 samples of water have been submitted to the County Analyst, 9 being pump wells, of which 4 were certified as being bad, 1 was closed upon a Justice's Order, 1 had a new well substituted, and 2 are being dealt with. Of the remaining 2 samples, one was from Sandiway Waterworks, and certified a pure water, the other from Wheelock Brook was certified bad, and unfit for cattle to drink.

Dairies and Cowsheds.—During the year 5 dairy farms have been registered, bringing up the total number of farms on the Register to 408.

The work of bringing up old shippons to the requirements of the regulations has been carried on with perseverance, and is leading to considerable improvement in this direction.

Slaughter-houses.—There are 21 of these on the Register, and they have been maintained as required by the regulations; one has been added during the year.

Scavenging.—In 9 Townships, viz.—Lostock, Weaverham, Wincham, Marston, Barnton, Anderton, Moulton, Davenham, and Leftwich, there is a public scheme in operation, the remaining Villages and Townships are dealt with by the individual owners. Taken on the whole this work is efficiently performed.

Sewerage.—In 14 Townships there are sewerage schemes, and during the year 700 yards of main sewers have been laid, draining 58 houses in Davenham, 1 in Leftwich, and new works are in progress at Barnton.

Nuisances.—Statutory notices to abate nuisances at 70 houses, 1 works (smoke nuisance) and 1 school have been served. In all cases the nuisances have been abated, and only one Justice's Order obtained.

Summonses to Sessions for firing chimneys have been served in 3 instances, and small fines imposed.

Canal Boats.—In all 52 canal boats have been visited by the Inspector. On board 30 boats there were infringements of the Canal Boats Acts or Regulations made thereunder. The owners were accordingly communicated with, and the defects noted have since been remedied.

RUNCORN

Rural District.

Medical Officer of Health—Dr. J. Adams.
Population at Census, April 1st, 1901—23,244.
Estimated Population in middle of 1905—24,416.
Area in acres—49,159.
Birth-rate per 1000 living—24.9.
Death-rate per 1000 living—12.7.
Death-rate from seven principal Zymotic Diseases—0.6.
Deaths under one year to 1,000 births—123.

The population of this Rural District was 23,244 at the Census in 1901, and the population of the corresponding area was 23,918 at the Census in 1891. The decrease in the population during the decennium of 1891-1901 was thus 674, that is 2.8 per cent. The estimate of the population made for the middle of 1905 appears rather high.

The District has, for registration purposes, been divided into three Sub-districts. These are as follows :—

1. Budworth, having an area of 24,160 acres, includes Great Budworth, Seven Oaks, Antrobus, Crowley, Higher Whitley, Lower Whitley, Bartington, Stretton, Stockton Heath, part of Appleton, part of Walton Inferior, Walton Superior, Acton Grange, Moore, Keckwick, Hatton, Daresbury, Newton-by-Daresbury, Preston-on-the-Hill, Dutton, part of Latchford, Grappenhall, and Thelwall.

2. Runcorn, having an area of 9,174 acres, includes Aston Grange, Aston-by-Sutton, Sutton, Stockham, Norton, Halton, Weston, and Clifton.

3. Frodsham, having an area of 15,825 acres, includes Frodsham Township, Frodsham Lordship, Helsby, Alvanley, Manley, Newton-by-Frodsham, Kingsley, Norley, and Kingswood.

The number of births registered in the whole Rural District in 1905 was 608. The number of deaths registered in the whole Rural District in 1905 was 322. From this gross total of deaths must be deducted 12 deaths of persons belonging to Runcorn Urban District, which occurred in the Union Workhouse at Dutton, and 3 other deaths of persons not belonging to the Rural District ; and, against these, 5 deaths of persons which took place outside the Rural District must be added, thus the deaths belonging to the District in 1905 were 312. The birth-rate was 2.6

below the average in the District in 1895-1904, and the death-rate was 1.9 below the average in the District in the same 10 years.

Of the 312 deaths belonging to the District, 1 was "uncertified," and 26 formed the subjects of Coroner's Inquests.

The causes of death, according to the verdict of the Coroner's Jury, were, briefly, as follows :—

Malnutrition	1
Natural causes	10
Accident	2
Suicide (hanging)	2
Blood-poisoning	1
Found dead	1
Found drowned	2
Accidentally drowned	3
Heart disease	4

Infant Mortality.—As 75 of those who died in 1905 were infants under a year old, the deaths of infants were equal to 123 per 1000 births. In 1895-1904 there were 121 deaths of infants under a year old to each 1000 births.

The principal causes of death among infants in 1905 were as follows :—1 diphtheria, 3 diarrhœa, 3 enteritis, 1 erysipelas, 3 tubercular disease, 5 bronchitis, 4 pneumonia, and 1 heart disease.

Deaths from Zymotic Diseases.—The number of deaths due to the principal zymotic diseases was 16, viz. :—1 scarlet fever, 5 diphtheria or membranous croup, 3 enteric fever, 7 diarrhœa. This gives a zymotic death-rate of 0.6 per 1000 living. There were also 2 deaths from epidemic influenza, and 1 death from erysipelas.

Cases of Infectious Disease notified.—There were 260 notifications of infectious disease received in 1905, viz. :—1 small-pox, 49 diphtheria, 110 scarlet fever, 17 enteric fever, 20 erysipelas, and 63 chicken-pox.

A tabular statement of 89 outbreaks of infectious disease is given by the Medical Officer of Health in his Report, which shows the result of his investigation in respect of the more important cases notified.

Isolation Hospital Accommodation.—The Hospital at Moore is still retained, and kept in readiness for the isolation of any cases of small-pox occurring in the District. In the Report for 1903, it was stated that a hospital for infectious disease, other

than small-pox, had been planned, that the plans had been submitted for approval of the Local Government Board, and that a suitable site has been obtained. Progress was made in the erection of this hospital in 1904 and 1905, and it was completed in November. The necessary furniture was promptly obtained, and it was opened for the reception of patients in December, 1905.

The Steam Disinfector.—The Medical Officer of Health draws attention to the fact that the disinfector (Washington Lyon's) only remains on its present site, near the Small-pox Hospital, during the pleasure of the Manchester Ship Canal Company. Seventy lots of bedding and clothing were disinfected therein during the year.

Water-supply needed for Small-pox Hospital.—The Manchester Ship Canal Company have sometime since removed their water tank, which supplied the Small-pox Hospital and disinfecting apparatus contiguous. The water required for the hospital, etc., has to be collected from the hospital roof, or carted for a considerable distance.

The Disinfection of Premises.—A special Report on this subject was submitted in 1903, recommending the practical abandonment of "sulphur fumigation," except for special cases, and proposing the adoption of spraying by formalin, or a strong solution of hypo-chlorite of lime, obtained from bleaching powder. The Council adopted the suggestions, and this method has now been in operation for a year and some months. The apparatus has proved very efficient and satisfactory, and will certainly result in more efficient disinfection of infected premises.

Small-pox.—Only one case of this disease was notified during 1905. The eruption was "discrete" and the type of disease was mild. No history of exposure to infection could be obtained. The patient was promptly removed to the Small-pox Hospital at Moore, which is always in readiness to receive patients. The Medical Officer urged re-vaccination on all contacts, but only one consented to be re-vaccinated. The remainder were carefully watched for a fortnight. Fortunately, no extension of the disease took place. The man attacked was a watchmaker 24 years of age, living at Old London Road, Stockton Heath. The notification was received on November 21st. The man had been vaccinated in infancy, but not re-vaccinated. He was removed to hospital on November 22nd. No possible source of infection could be ascertained. The Medical Officer of Health complains that numbers of children are at present allowed to escape vaccination through the ignorant prejudices of their parents, which have

been dignified by legislation as "conscientious objections.' There are now growing up an ever increasing population of unvaccinated persons, whose function it will be to keep alive this terrible scourge—small-pox.

Chicken-pox.—It has been already stated that 63 cases of chicken-pox were notified in 1905. The disease was very prevalent, cases being notified in every month, and located in 12 different townships. The Medical Officer of Health felt that it was his duty to personally visit all the cases, in order to ascertain that no undetected small-pox existed among the cases.

Measles.—This disease is not notified in the District. It has been prevalent during the year, in many townships, but no death was reported therefrom.

Whooping-cough is also not notifiable. It was prevalent in 1905, as in 1904 and 1903, but in 1905 no deaths were recorded.

Scarlet Fever was exceptionally prevalent during 1905. In all, 110 cases were notified, a larger number than in any year since 1896. Only one case proved fatal. The number of cases, and deaths, during the ten years 1895-1904 are appended for the purpose of comparison :—

In 1904..	101	cases,	0	deaths	In 1899...	85	cases, 6 deaths
„ 1903...	45	„	1	„	„ 1898...	34	„ 1 „
„ 1902...	57	„	2	„	„ 1897...	59	„ 7 „
„ 1901...	39	„	1	„	„ 1896...165		„ 5 „
„ 1900...	33	„	0	„	„ 1895...163		„ 5 „

Diphtheria—The number of cases notified in 1905 was 49, and 5 of these proved fatal. The number of cases, and deaths, in the ten years 1895-1904 are given below for the purpose of comparison :—

In 1904...50		cases,	8	deaths	In 1899...37	cases,	2 deaths
„ 1903...27		„	2	„	„ 1898...48	„	2 „
„ 1902...35		„	7	„	„ 1897...43	„	3 „
„ 1901...44		„	8	„	„ 1896...43	„	9 „
„ 1900...17		„	6	„	„ 1895...16	„	2 „

The Medical Officer of Health remarks on the tendency of diphtheria to re-appear in the same houses, or to attack patients previously affected. One of the cases notified in 1904, was a woman suffering for the fifth time—once in each of five consecutive years. About the same time two other cases occurred in adjacent properties.

The more the Medical Officer of Health sees of diphtheria, the more convinced he is, that it is usually caused by direct infection from one case to another, and that cases are not ordinarily associated with defective sanitation. Much of the recurrence of the disease would be obviated, if all cases were treated with local disinfection of the throat, etc., for a fairly prolonged period, after recovery had taken place, that is to say, until bacteriological examination of a swab from the affected part indicated the absence of the diphtheria bacillus. The Medical Officer of Health urges Medical Practitioners to do their best to see that this thorough disinfection of the throat, etc., is efficiently carried out.

Anti-diphtheritic Serum is supplied by the Medical Officer of Health free to patients unable to afford it, and at cost price for others. He also supplies sterilized syringes. The use of this serum appears to be on the increase, with satisfactory results, if employed in the early stages of the disease.

Enteric Fever.—Of the 17 cases notified, 2 proved fatal. There was also a case notified in December, 1904, which proved fatal in January, 1905. The two cases notified in 1905, which proved fatal, occurred in connection with an outbreak of the disease at Weston. This outbreak was popularly attributed to effluvia emitted from the old sewers, during the process of taking them up, prior to re-laying the sewers. This explanation of the cause of the outbreak is, however, rejected by the Medical Officer of Health. The number of cases notified, and the number of deaths in the ten years 1895-1904, are given below for the purpose of comparison:—

In 1904.....	10	cases,	3	deaths	
„ 1903.....	1	„	0	„	
„ 1902.....	13	„	4	„	
„ 1901	27	„	4	„	
„ 1900.. ...	15	„	4	„	
In 1899.....	14	cases,	3	deaths	
„ 1898.....	6	„	1	„	
„ 1897.....	8	„	1	„	
„ 1896.....	10	„	1	„	
„ 1895.....	10	„	0	„	

Examination of Morbid Products.—Towards the close of the year 1902, the Medical Officer of Health suggested that the District Council should make application to Professor Delépine to include this District in the scheme for having products from cases of diphtheria, enteric fever, etc., examined at the Public Health Laboratory, Victoria University, Manchester, and this had been done. Such products are now examined and reported on for Medical Practitioners free of cost.

Epidemic Influenza.—This disease is not notified. Only two deaths were recorded in 1905.

Phthisis and other Tubercular Diseases.—There were 20 deaths from phthisis, and 11 from other tubercular diseases. The phthisis death-rate was therefore 0.81 per 1,000 living, the death-rate from all tubercular diseases was 1.27 per 1,000 living.

Cancer and Malignant Disease.—Eight deaths were attributed to cancer, a number which is equal to 0.32 per 1,000 living.

Water-supply.—Runcorn, for a Rural District, is, in the opinion of the Medical Officer of Health, exceptionally well supplied from excellent public sources, derived partly from adjoining urban supplies, and partly from Waterworks constructed within the District. These supplies (four in number) are distributed over the District, approximately, as follows:—

(a) The Liverpool Vyrnwy Water Scheme supplies at present the township of Sutton, and a portion of Aston. In view of the requirements of the new Isolation Hospital at Dutton, the supply from this source has been extended to the Hospital. Supplies from these mains have been given to 16 houses in Dutton, 6 of which are farm houses. The extension was made in 1904 to Preston-o'-th'-Hill, and Preston Brook. By means of it about 70 houses have received new water supply, and, as many houses here abut on the line of the main, it is probable that about 17 others will shortly be supplied. In the Township of Aston, 10 houses have received this supply, and at Halton and Weston, the Vyrnwy water has been given through the mains of Runcorn Urban District Council. The Union Workhouse while possessing an excellent water supply for drinking purposes, has, however, had the Liverpool water laid on for the purpose of enabling it to deal with an outbreak of fire, the existing supply being moderate only in amount, and low in yield. By this extension to Preston Brook, the Liverpool water practically meets the Warrington water from the other side of the District which comes as far as Daresbury, the adjoining township.

(b) The Warrington Corporation Waterworks has extended its mains into the Rural District so far as now to supply the whole of Stockton Heath, Walton Inferior (with the exception of a few houses), Walton Superior, Moore, a portion of Acton Grange, the greater part of Daresbury, Latchford Without, Thelwall, and a portion of Grappenhall. The remaining portion of Grappenhall is supplied by private waterworks belonging to one of the principal owners, and erected at his own cost.

In 1904 the Warrington mains were extended to Higher Stretton, where about a dozen houses and farms have been supplied. The other portion of Stretton may be supplied by a further extension.

(c) The Frodsham and Frodsham Lordship Waterworks supply Frodsham and Frodsham Lordship, the latter township including the Hamlets of Overton, Five Crosses, Bradley, Netherton, and Woodhouses. These works are doing satisfactorily. No extensions were carried out in 1904 or 1905.

(d) The Helsby and District Water Company at present supplies practically the whole of Helsby, and it is hoped, now the District Council have become the proprietors of this supply, that its further extension to Alvanley will be carried out.

Thus, the most important and populous portions of the Rural District are supplied, or about to be supplied, with excellent water. The purely rural localities have to rely upon local supplies chiefly derived from wells. Of the townships still without an efficient public supply, reference may be made to three.

Norley—A public enquiry was held during the summer of 1904, in reference to the proposal to supply the Blakemere Lane portion of Norley with the Liverpool Vyrnwy water. Strong opposition to this plan was manifested on the part of influential residents, and an expressed desire was for the first time made known to the Medical Officer of Health, to include the entire Township of Norley in any scheme which should involve the expenditure of public funds. It was therefore resolved that all the existing water supplies and available sources of water supply in Norley be analysed, previous to any scheme being decided on.

In accordance with this resolution, the existing water supplies are being tested. Of 29 supplies in use, or possible supplies, analysed in 1904 and 1905, only one water is returned as "a first-class water," that coming from the running pipe at Stanney Brook; another from Forest Well, off Blakemere Lane, is returned as "a good water, fit for domestic use," one to Schoolmaster's house, "a very good water," 3 or 4 others "fairly good," and the rest vary from "not good," "doubtful purity," "should be filtered," and so on, to "a bad water," "not fit for domestic use." Of the latter no less than 18 were discovered, which up to the present time have been usable, if not used, by the population of Norley. It is sur-

prising that in a beautiful Township like Norley, far removed from polluting towns or manufacturers' waste, with nothing else to pollute its waters beyond its scattered farms and sparsely sprinkled residences, there should be no less than 18 out of 29 drinking waters "not fit for domestic use," and it specially emphasises previous recommendations of the Medical Officer of Health, that the water supply to Norley should be improved. A water engineer of repute, has been instructed, and has prepared alternative schemes, showing respectively the cost of (a) the adoption of the Liverpool Vyrnwy water, and (b) the utilization of the excellent water from the running pipe at Stanney Brook already alluded to. A decision on this matter should shortly be taken.

Bartington—This supply has not yet been improved, in consequence of some engineering difficulties of an unexpected character, occurring in the course of the projected improvements, but it is hoped these difficulties will be overcome shortly.

Appleton—As the extension of the Warrington water mains to Stretton implies their being laid through Appleton, the portion of Appleton abutting on the extension may thus be provided with Warrington water. No houses or farms at Appleton were thus supplied in 1904 and 1905.

There is, of course, great difficulty in obtaining efficient supplies for so large a District, and so scattered a population. Still, it is for the Sanitary Authority to ensure that as good a supply of drinking water as is obtainable should be brought into every dwelling-house, and the Medical Officer of Health accordingly suggests that the District Council should direct that a systematic examination of drinking waters be undertaken, irrespective of complaints, or of notified cases of disease. Much has been done in past years, and up to the end of 1905 as many as 710 samples of water supplies had been analysed. Still much remains to be done in this respect.

The number of water certificates for new houses granted by the Council during the year 1905, was 27. There were 49 houses occupied under such certificates.

Sewerage and Sewage Disposal.—The Helsby sewerage works and sewage disposal arrangements, which were completed in 1903, have since been in operation, and appear to be working satisfactorily. Many houses have been connected with the sewers, but several still remain unconnected.

At Halton, the scheme referred to in the Report for 1903 has been adopted, and negotiations have been opened with Runcorn Urban District Council, with a view of connecting Halton to the town system of sewerage. The scheme underwent revision in 1905, and was finally approved.

The Medical Officer of Health points out that extensive sewerage works are not applicable to scattered rural districts, but much good work may be accomplished by the construction of small installations of septic tanks, and filter beds, and sufficient sewers thereto, rather than allow drainage into ditches and water-courses.

Rivers Pollution.—From what has been stated above, it will be seen that the pollution of Halton Brook is being dealt with. As regards the pollution of the Iron Dish Brook, the Helsby Sewage Disposal Works should effectually deal with this. With reference to Kingsley Brook, the pollution is certainly less than it was some years since. This matter still has the attention of the Authority.

Refuse Removal.—The Authority do not undertake the collection and disposal of excremental and other refuse in any part of their District, except at Stockton Heath, and here the work is not done very efficiently. Stockton Heath continues to develop as a semi-urban District, and it is necessary that the systematic removal of night-soil and ashes, should be properly supervised. Elsewhere, not excepting Frodsham, the emptying of middens, and removal of refuse, is arranged for by occupiers, or owners, or both combined. They have to dispose of the refuse as best they can, and in many cases this is a matter of great difficulty. Weston, among other townships, requires a good system of refuse removal.

Wherever possible a pail containing dry earth, should be substituted for the pit containing ashes, refuse, and rainwater, which is usually in evidence. A mixture of earth and excreta forms a valuable manure, but a mixture of ashes, tins, broken crockery, rubbish, and rain and excreta, is of no value to anyone.

Building Bye-laws.—Those lately adopted at Halton are in force. Further revision of the bye-laws for Stockton Heath is proceeding.

The Private Street Works Act has been adopted for Stockton Heath, and the portion of Appleton in the Rural District.

Runcorn Rural District.

The Inspector (Mr. Jas. Farrington) furnishes information as to matters coming under his supervision.

Nuisance Abatement.—Formal notices were served for the abatement of nuisances when this appeared necessary, but the abatement of many other nuisances was obtained without the serving of notices. A large proportion of the nuisances reported or discovered were in connection with defective sanitary accommodation.

Factory and Workshop Act.—The Medical Officer of Health and Inspector have visited and inspected the bake-houses, workshops, etc., in the District, and a register has been compiled. All the requirements of the Act have been carried out. The residences of the out-workers have been inspected and found in good sanitary condition. There are no underground bake-houses in the District.

Lodging-houses have been visited from time to time by the Inspector.

Dairies and Cowsheds.—The persons registered to carry on the trade of dairymen and cowkeepers number 181. Four were registered for the first time in 1905. The premises are inspected from time to time, and steps taken to make them as sanitary as practicable. Several cowsheds have been improved during the year, and others are being improved.

Unsound Meat.—In the course of the year the Inspector examined 5 carcases of meat to see if they were unsound, or any part of them. All were passed.

Slaughter-houses were duly inspected, 3 licences were renewed and 2 others were granted.

Offensive Trades.—No complaint appears to have been made in 1905 of effluvia from premises in which offensive trades were carried on.

Canal Boats.—The number of boats inspected in 1905 was 23. Of these, 20 conformed to the Canal Boats Acts and the Regulations made thereunder. Steps were taken to remedy the defects noticed. A death took place on board a canal boat at Grappenhall, the person who died being the son of a boatman.

TARVIN

Rural District.

Medical Officer of Health—Dr. G. A. Kenyon.
Population at Census on April 1st, 1901—12,614.
Estimated Population in middle of 1905—12,558.
Area in acres—56,874.
Birth-rate per 1,000 living—22.5.
Death-rate per 1,000 living—12.6.
Death-rate from seven principal Zymotic Diseases—0.5.
Deaths under one year to 1,000 births—56.

The population of Tarvin Rural District was 12,614 at the Census in 1901, and 12,703 in the corresponding area at the Census in 1891. The decrease in the population during the decennium in 1891—1901 was thus 89. The estimate of the population made for the middle of 1904 is, therefore, a little lower than the Census population.

This large Rural District is not divided into sub-districts, but it includes no less than 58 Townships. These are as follows:—Broxton, Tilston, Horton, Grafton, Carden, Stretton, Caldecutt, Crewe, Farndon, Churton-by-Farndon, Barton, Clutton, Kingsmarsh, Coddington, Chowley, Aldersey, Harthill, Edgerley, Churton-by-Aldford, Aldford, Buerton, Lea Newbold, Churton Heath, Saighton, Iddinshall, Waverton, Huxley, Hatton, Tattenhall, Golborne Bellow, Newton-by-Tattenhall, Handley, Golborne David, Foulk Stapleford, Bruen Stapleford, Burton, Clotton Hoofield, Dutton, Willington, Kelsall, Ashton, Mouldsworth, Horton-with-Peele, Tarvin, Hockenhull, Pryors Hayes, Barrow, Guilden Sutton, Cotton Edmunds, Cotton Abbots, Rowton, Huntington, Tiverton, Tilstone Fearnall, Beeston, Burwardsley, Shocklach Church, and Shocklach Oviatt.

In 1905 the number of births registered in the District was 282, and the number of deaths (including 11 occurring outside the District, belonging thereto) was 158. The birth-rate is 2.9 below the average of the District in 1895—1904, and the death-rate is 1.5 below the average of the District in the same 10 years. There were 7 deaths from the principal zymotic diseases, viz.:—1 measles, 4 diphtheria, 2 diarrhœa. There were 4 deaths from epidemic influenza, 3 from enteritis, 11 from phthisis, 2 from other tubercular diseases, 10 from cancer, 9 from bronchitis, 7 from pneumonia, 1 from pleurisy, 3 from alcoholism or cirrhosis of the liver, 2 from premature birth, 22 from heart diseases, 4 from accidents, and 2 from suicide.

Four of the deaths occurred in the Chester Infirmary, 2 in the County Asylum, and 5 in the Workhouse.

Only 16 of those who died were infants under a year old, and 62 were persons 65 years of age and upwards. Four of the latter were over 90 years old.

Cases of Infectious Disease notified.—There were 30 cases of infectious disease notified, viz.:—8 diphtheria, 12 scarlet fever, 3 enteric fever, 1 puerperal fever, and 7 erysipelas. Of these, there were 6 cases removed to Hospital, viz.:—3 diphtheria, 2 scarlet fever, and 1 enteric fever. Care was taken to isolate the other cases as well as possible. Each household attacked was visited, and disinfection was attended to. Children from infected houses were kept from school. Where required, action was taken for the remedy of structural defects on premises.

Three of the scarlet fever cases occurred in one house, and 2 in another house. The other cases of infectious disease were distributed over different parts of the District, and scattered over the year. There was thus no general spread of infection.

Isolation Hospital Accommodation.—In consequence of the impossibility of making a permanent arrangement with the Chester Authorities for the reception of infectious cases, it has been found necessary to take steps for making fresh Hospital provision for the District. With this object the District Council, in conjunction with Tarporley Urban District Council, and Malpas Rural District Council, have made application to the Local Government Board, and obtained the formation of a Joint Hospital District.

The Joint Hospital Board have selected a site for a Hospital, and this site has been inspected and approved by the Medical Officer of Health, and the County Medical Officer. It is a good site and conveniently central. It cannot be acquired except by means of a Provisional Order, which is being applied for.

Inspection.—The Medical Officer of Health has visited the District from time to time for the investigation of cases of infectious disease and general inspection, and has advised thereon as to points of detail in connection with sanitary work. He has also given advice with regard to the sewerage schemes for the District.

Water-supply.—Aldford, Churton, and Saighton are supplied with water from the Wrexham Waterworks, the mains having been extended by the late Duke of Westminster, who also caused Waverton to be supplied with water from a well, the water being raised by a windmill.

The village of Ashton has been supplied with water by the owners of the estate, by a gravitation scheme. The water is obtained from springs in Delamere Forest.

At Harthill and Kelsall there are gravitation supplies from wells, provided by the owners of property for their tenants.

The Townships of Tiverton, Tilstone, and Beeston, have an excellent public supply from deep wells. There has been a greater demand for this water than was anticipated, so that, though there has been no diminution in the flow of water, some addition has become necessary to the means for utilizing it. An increased supply has just been provided.

In other places, the general supply is from ordinary wells. From some of these ordinary wells, 4 samples of water during the year were brought to the Medical Officer for analysis. Two were very good, 1 was fairly good, and the other very bad, and unfit for use. Advice was given accordingly.

Tarvin Village is dependent upon ordinary wells for water. One of these wells (that at the top of the village) was constructed by the Rural Sanitary Authority. There is a second public well at the end of the village. One of these public wells has been deepened, and both have been afforded additional protection from surface contamination. There are other wells in the village yielding good water, and some water which is not good. All these Tarvin wells are, of course, in some degree liable to pollution, and several efforts have been made in past years to introduce a pure supply from without. This would not only be safe as regards health, but would save much labour in pumping and carrying. Some of the local rate-payers are anxious for a proper water supply, but a large proportion resolutely oppose incurring the necessary expense.

Sewerage and Sewage-treatment. — The District being thinly populated, and not having many large villages, there are few sewers, and water-closets are comparatively rare.

Works for the purification of the sewage of Aldford, constructed by the late Duke of Westminster, commenced working during the year 1899. Works for the purification of sewage have also been constructed at Eccleston Ferry. At the Aldford Works the "International" process was made use of, but they underwent reconstruction in 1903.

At Eccleston Ferry the Scott-Moncrieff process has been adopted—the sewage passing through a septic tank, and then through trays of filtering material.

Tarvin Rural District.

Plans have been prepared for the purification of sewage at Tattenhall, Tarvin, and Barrow, but the District Council have not yet received sufficient support to enable them to proceed with these.

Practically no progress was made in 1904 or 1905, with the various sewerage schemes, provisionally reported as under consideration. However, delay is not altogether lost time, as improvements are made yearly in the methods of dealing with sewage.

At Barrow there seems to be special need at present for proper Outfall Works. Land is available, and the construction of the works should be proceeded with.

Ashpits, &c.—Throughout the District most of the houses are provided with ashpits and privies. These, in some instances, are emptied at short intervals, the contents being used on adjoining land, but generally the emptying awaits the convenience of neighbouring farmers. The District Council have aimed at getting the privies modified so as to approximate as much as possible to earth-closets, and much has been done in this direction.

Reports of Inspectors.—The arrangements under which the duties of Inspector of Nuisances are undertaken by the two Surveyors to the District Council, continues to work well in this large District, and progress is being made in removing conditions injurious to health. Mr. Piggott makes a detailed and careful report of his work as Inspector of Nuisances. He reports that during the year 6 complaints have been received, 97 houses, premises, &c., have been inspected, and 11 orders have been issued for sanitary amendments of houses and premises. Six houses have been cleansed or repaired. At 7 houses the drains have been put in good order. Two new pumps for supply of water have been provided, and 6 wells have been cleansed, repaired and covered.

Mr. Carter reports that he has received no complaints of nuisance, but he has inspected 168 houses and premises Nine formal notices for the abatement of nuisance have been served, and 17 nuisances have been abated without formal notices. Eight houses have been cleansed and whitewashed. At four houses the drains have been put in good order. Seven wells have been newly constructed, and 3 wells cleaned, repaired and covered. Five public pumps have been repaired.

Dairies, &c.—Model regulations made under the Dairies, Cowsheds, and Milkshops Order came into force on January 1st, 1900.

Tarvin Rural District.

Sixty-one premises registered for the sale of milk have been duly inspected and kept in order.

Factory and Workshop Act.—In Mr. Piggott's division of the District, there are 9 factories and 7 workshops registered, and under inspection. In Mr. Carter's division of the District, 7 bake-houses and 5 other premises are registered and under inspection.

Slaughter-houses.—There are 4 slaughter-houses in Mr. Piggott's division of the District, and 8 slaughter-houses in Mr. Carter's division.

TINTWISTLE

Rural District.

Medical Officer of Health—Dr. W. E. S. Burnett.
Population at Census, April 1st, 1901—2,105.
Estimated Population in middle of 1905—2,095.
Area in acres—13,621.
Birth-rate per 1,000 living—22.9.
Death-rate per 1,000 living—15.7.
Death-rate from seven principal Zymotic Diseases—0
Deaths under one year to 1,000 births—187.

This Rural District contains part of the Township of Tintwistle, and the whole of the Townships of Hattersley and Matley. The area is given as follows:—

	Area in Acres.
Part of Tintwistle	11,856
Hattersley	1,060
Matley	705

The area, exclusive of moorland, is returned as 4,646 acres.

The population of this Rural District was 2,576 at the Census in 1891, and 2,105 at the Census in 1901. Thus during the decennium 1891-1901, there was a decrease in the population of 471.

This is due to the compulsory removal of a number of families from the District, owing to the small extent of work now carried on in two large cotton factories which stopped a few years ago. These unfortunate events have pauperised the once prosperous village of Tintwistle. There were 90 empty houses in

the District at the time of the Census, and 81 of these were in this village. The population of Hattersley and Matley slightly increased between the Census of 1891 and the Census of 1901.

The population of the whole District has slightly decreased since the Census in 1891, owing to the departure of families from want of employment. Numerous stoppages and short time, during the latter part of 1903, have caused much poverty and distress.

In 1905, the number of births registered was 48, and the number of deaths registered in the District was 33. There were no deaths of residents belonging to the District registered elsewhere. The birth-rate is about 0.5 above the average in 1895-1904, and the death-rate is about 0.8 above the average in the same 10 years.

Infant-Mortality.—Nine deaths were of infants under one year of age, a number equal to 187 per 1,000 births. In the 10 years, 1895-1904, the deaths of infants under a year old was equal to 121 per 1,000 births. The registered causes of death were 4 atrophy and debility, 2 tubercular disease, 1 enteritis, 1 bronchitis, and 1 premature birth. The infant death-rate being exceptionally high, is due to the occurrence of four deaths of twin born infants, who lived only a few days, and the death of an immature child, who lived but five hours.

Inquests.—The Coroner held inquests on four bodies. The verdicts returned were as follows:—accidently drowned, found drowned, inanition, and suicide by drowning whilst of unsound mind.

Infectious Disease.—Nine cases of infectious disease were notified, viz.:—3 scarlet fever, 2 enteric fever, 2 puerperal fever, and 2 erysipelas. These were isolated, as far as practicable, at home.

Scarlet Fever.—One of these cases occurred in April at Crowden, 1 in July at Manchester Road, and the third in December at Pinfold Farm. The disease was of a very mild character, and the cases were separated long distances from each other. The source of infection is not traced. As regards the last case, stringent measures were taken to prevent any risk of spreading the disease through the agency of milk. The patient (a girl 17 years old) was removed to a cottage, and a nurse engaged to attend on her. This patient nursed her brother when suffering from scarlet fever 15 months ago, and escaped infection.

Tintwistle Rural District.

Enteric Fever.—One of the cases occurred in Conduit Street, and the other in Woodhead Road. The first case was most probably due to emanation from a sewer into the house. The waste pipe from the sink stone passed directly into the drain, and must have served as a ventilator. The source of the second case could not be traced, but there was nothing to suggest that either water, milk or other food had been the agent conveying infection.

Puerperal Fever.—Both the cases of puerperal fever were attended by midwives, and proper steps were taken to prevent these women from conveying the disease to others. One of the cases proved fatal.

Preventing the Spread of Infectious Disease.—On receipt of notification of infectious disease the premises are examined, and where defects are found the owners are served with notices to remedy them. The patients are isolated, as far as possible, and their clothes and bedding disinfected. The parents of children suffering from infectious disease are given printed papers specifying the precautions which should be observed in each case, and are instructed to prohibit all other members of the family from attending school, and other people's children from entering the infected house until all risk of infection is over. Information is also given to the schoolmaster.

Isolation Hospital.—The Small-pox Isolation Hospital was erected in 1903, and ready to receive patients in October. It is provided jointly by Hollingworth and Mottram Urban Districts and Tintwistle Rural District. A nurse has been appointed, and a suitable ambulance has been obtained.

Water-supply.—This is of good quality and plentiful.

Dairies, Cowsheds, &c.—These have been visited and generally found clean and in good order, but in some instances more light and better ventilation has been suggested and provided. In several cases defective drains have been put in order. Regulations under the Dairies, Cowsheds, and Milkshops Orders were made by the District Council on August 8th, 1901, and came into force on October 1st. Dairy cattle in Rural Districts are usually turned out of the sheds in the day time all the year round, unless the weather is exceptionally bad, and are better off as regards plenty of fresh air than those kept in sheds in, or near, large towns.

Milk Shops.—There are no milk shops in the District, the supply of milk being obtained from the various farms.

Factory and Workshop Act, 1901.—This Act, which came into operation at the beginning of the year 1902, has had full attention. There is one small factory in the District, and there are 9 workshops, 4 of which are ordinary workshops, and 6 domestic workshops. They have been visited and found clean, well ventilated, and in good order. Considerably more air-space is allowed than the Act requires. There are no underground bake-houses.

Refuse Removal.—The routine work of emptying ashpits, &c., has been properly done, under the supervision of the Inspector.

Nuisance Abatement.—All nuisances complained of or discovered have had attention. In course of abating nuisances many structural improvements have been effected. There have been 300 yards of new drains laid.

Inspection.—The Medical Officer of Health and Inspector have made frequent inspections in the District, and where sanitary defects have been observed, action has been taken of remedy them.

There are no offensive trades carried on in the District, and there are no common lodging-houses.

WIRRAL

Rural District.

Medical Officer of Health—Dr. G. A. Kenyon.
Population at Census on 1st April, 1901—14,017.
Estimated Population in middle of 1905—15,500.
Area in acres—37,594.
Birth-rate per 1000 living—23.8.
Death-rate per 1000 living—11.1.
Death-rate from seven principal Zymotic Diseases—0.5.
Deaths under one year to 1000 births—83.

The population of this Rural District was 18,629 at the Census in 1891, and 18,099 at the Census in 1901. The decrease in the population during the decennium 1891-1901 was thus 530, that is 2.8 per cent. The decrease is due to the fact that among those enumerated in 1891 at Whitby, Netherpool, Hooton, and Eastham, were 2,432 persons engaged in the construction of the Manchester Ship Canal, who formed no part of the local population

after 1892. The normal population of Wirral was therefore considerably increased between 1891 and 1901.

On April 1st, 1902, part of this Rural District (viz.: Whitby Civil Parish) was constituted Ellesmere Port and Whitby Urban District. The area of the Rural District was thus reduced by 1,261 acres, and the Census population was thus reduced by 4,082 persons. The Census population of the reduced District was therefore 14,017, and the population for the middle of the year 1905 is estimated to be 15,500, for about 240 newly-built houses have come into occupation since the date of the Census.

The District has for registration purposes been divided into four sub-divisions, viz. :—Neston, Eastham, Bebington. and Woodchurch. Till quite recently the District had but three sub-districts, Brimstage, Poulton-cum-Spital, and Storeton (now constituting the sub-district of Bebington) being part of the sub-district of Eastham. Regarding Neston and Bebington as one sub-district, the sub-districts are as follows :—

1.—Neston, having an area of 12,113 acres, includes Burton, Gayton, Heswall-cum-Oldfield, Ness, Puddington, Raby, Thornton Hough, and Willaston.

2.—Eastham, having an area of 10,840 acres, includes Childer Thornton, Eastham, Great Sutton, Hooton, Ledsham, Little Sutton, Netherpool, Overpool, Brimstage, Poulton-cum-Spital, and Storeton.

3.—Woodchurch, having an area of 12,598 acres, includes Arrowe, Barnston, Caldy, Frankby, Grange (part of) Greasby, Irby, Landican, Moreton, Pensby, Prenton, Saughall Massie, Thingwall, Thurstaston, Upton-by-Birkenhead, and Woodchurch.

To the Rural District, as thus constituted, must be added what has been till lately the Rural District of Birkenhead. This consists of Bidston-cum-Ford, having an area of 1,713 acres, and Noctorum, having an area of 330 acres.

The number of births registered in Wirral Rural District in 1905 was 370. The number of deaths registered in Wirral Rural District in 1905 was 206. From the deaths must be excluded 40 occurring within the District, among persons not belonging thereto, and there must be included 6 deaths of residents registered elsewhere.

Wirral Rural District.

The birth-rate is 2.2 below the average of the ten years 1895-1904, in the District, including Whitby Civil Parish.

The death-rate is 1.6 below the average of the same ten years in the District, including Whitby Civil Parish.

There were 9 deaths from the principal zymotic diseases, viz :—2 measles, 3 scarlet fever, 1 diphtheria, 1 enteric fever, and 2 diarrhœa. There was one death from alcoholism. There were 15 deaths from phthisis and other tubercular disease, 12 from cancer, 12 from bronchitis, 20 from pneumonia and pleurisy, 4 from premature birth, 17 from heart diseases, and 6 from accidents.

Infectious Disease notified.—There were 83 cases of infectious disease notified, viz. :—2 small-pox, 12 diphtheria, 60 scarlet fever, 6 enteric fever, and 3 erysipelas. Of these, 1 case of small-pox, 5 cases of diphtheria, 37 cases of scarlet fever, and 3 cases of enteric fever, were removed to hospital.

Small-pox.—The 2 cases of small-pox occurred nearly at the same time and in the same locality, a comparatively lonely and out of the way place. Their origin is quite inexplicable. Both the sufferers had been vaccinated in infancy, and the eruption was much modified. The usual precautions to prevent spread of infection were taken promptly and with complete success.

Scarlet Fever.—As in the two previous years cases of scarlet fever have been somewhat numerous, but mostly of a mild type. The cases were kept well under control so that there was no general spread of infection.

Diphtheria and Enteric Fever.—The cases of these diseases which occurred were not numerous, and call for no special remark. There was no spread of infection attributable to milk supply or water, or any common sewerage system.

Action taken to Prevent spread of Infection.—All the houses where infectious disease occurred were visited, removal to Hospital offered, disinfectants supplied as required, warnings against spread of infection issued, children kept from school, removal of insanitary conditions attended to, etc. On the termination of a case, the premises, bedding, and clothing were disinfected.

Isolation Hospital Accommodation.—This, which is provided by the Joint Hospital Board, consists of the Spital Hospital and the Greasby Hospital. Both Hospitals are situated in the District. The Spital Hospital was much enlarged and

improved in 1902. Two new wards, each furnished with 8 beds, and 2 isolation rooms, each furnished with 2 beds, together with kitchen and lavatories, were built, forming an additional pavilion. Three bedrooms and a lavatory were also added to the administrative block. The laundry was enlarged and better equipped. In order to effect this Hospital extension, two acres of land were acquired.

New Disinfecting Apparatus and New Destructor.—A good disinfecting apparatus for disinfecting bedding and clothing by steam, and a destructor contiguous thereto, were provided on the hospital ground in 1902.

Hospital Ambulances.—Two ambulances have been provided for the conveyance of patients.

Covered Vans.—During 1903, a pair of covered vans were built for the carriage of bedding, etc., to the disinfecting apparatus, and for returning the same to the owners.

Hospital Outfall Works.—The Dibdin filter-beds, at the Isolation Hospital, continue to work satisfactorily.

An Auxiliary Hospital.—The Isolation Hospital accommodation was extended during 1903, by the acquisition of a plot of land at Pensby, with a house upon it. The house was put in good repair, and opened lately for the reception of convalescent patients. The land is $7\frac{1}{2}$ acres in extent, and with the building thereon, cost £1,275. Putting the house in order, and altering and furnishing the same, cost £400. Loans were sanctioned for these two sums, respectively on August 19th, 1903, and on January 13th, 1904.

New Houses.—One hundred and twenty-four plans have been passed during the year for the building of 144 new houses.

Inspection.—The Medical Officer of Health has frequently made general and special inspections, and investigated outbreaks, of infectious disease. In connection with these inspections he has advised the District Council on various points of detail.

Water-supply.—The District is generally supplied with water from the West Cheshire Waterworks, Bidston-cum-Ford and Noctorum are supplied from the Birkenhead Waterworks, and Moreton and Saughall Massie from the West Kirby Waterworks.

The West Cheshire Water has of late become unduly hard, which causes great inconvenience from the furring up of boiler pipes, and the unsuitability of such water for laundry work.

The District is traversed (but receives no supply from) a large pipe conveying water from Vyrnwy to Wallasey.

Sewerage of Fender Valley.—As mentioned in the Annual Report for 1902, the Local Government Board sanctioned a loan of £27,500 for the purpose of carrying out the Fender Valley sewerage scheme. The scheme provides for the construction of an outfall-sewer extending from Barnton to the culvert within the Borough of Birkenhead, and affords an outfall for the sewerage of the Townships of Arrowe, Barnton, Bidston-cum-Ford, Landican, Moreton, Noctorum, Pensby, Prenton, Storeton, Thingwall, Upton, and Woodchurch. The western side of the Township of Oxton, in the Borough of Birkenhead, can also, by arrangement, use this outfall.

This important sewerage work was commenced in the early summer of 1903, and is now completed. It will be ready to convey sewage from the contributory parishes as soon as the sewers of these parishes are finished. The branch sewers have been proceeded with during 1905, and at present those for Bidston Village and Prenton are conveying the sewage of these places to the outfall sewer. The great part of the sewage of Upton also has been diverted from the stream into which it formerly flowed, and is now delivered into the outfall sewer. Another sewer has been laid in Upton, and is ready to receive the remaining sewage from there, together with that from a part of Arrowe. The Township of Noctorum has also been provided with a sewer to which connections are now being made, and from which an extension runs northwards into the southern part of Bidston. It receives much of the sewage of that Township, which formerly flowed into the sewers of the Birkenhead Corporation. During the year a contract has been let for the sewerage of Moreton. This work is now well advanced. It is believed, therefore, that before next summer most of the causes of pollution will have been abated.

Sewerage of Childer Thornton, Eastham, and Hooton.—To meet the views of the Local Government Board, Messrs. Beloe and Priest, the District Council's Engineers, have prepared fresh schemes for the Sewerage of Childer Thornton, Eastham and Hooton; and application for sanction to borrow the sum required to carry out the work was made in 1903. The official Inquiry was held early in 1904, and the sanction was shortly afterwards received. The Joint Sewerage of Childer

Thornton, a part of Eastham, and Hooton, is almost complete, and it is expected that the works will be in operation very shortly.

The sewerage for the village of Eastham is finished, and house connections are being made.

Sewerage of Willaston and Gayton.—Contracts have been let for the sewerage of Willaston and Gayton, and the works are being proceeded with.

Sewerage of Great Sutton.—The sewerage of Great Sutton, which has been considerably delayed in execution, is now about to be completed and put in operation.

Sewerage of Little Sutton.—These works were completed in 1902. Many house connections have since been made.

Other Sewerage Schemes.—The scheme for the sewerage of Thornton Hough is still under consideration. As regards Grange, an arrangement has been made with the adjoining Urban District of Hoylake and West Kirby, for the reception of the sewage from the row of semi-detached houses in Heron Road, from which a nuisance in this township arose. By this means the necessity of a scheme of sewerage for the township has been avoided for the present.

It was stated in the Annual Report for 1904 that application had been made to the Local Government Board for a Provisional Order granting the powers of the Lands Clauses Acts for the compulsory acquisition of land for the purposes of a scheme for that part of the Parish of Spital in which the Union Workhouse is situated. This matter has gone further, as with the assistance of the Local Government Board it became possible for the Guardians to deal with the subject themselves. Tenders are now being invited for the carrying out of this work.

Flushing Sewers.—The flushing of the sewerage systems at Eastham, Childer Thornton, Heswall, Upton, and Little Sutton is regularly attended to.

Refuse Removal.—The District Council contract for the removal of privy and ashpit refuse at Little Sutton, Childer Thornton, Eastham, Heswall, Upton, Bidston, and Prenton.

Building Bye-laws and New Houses.—Building bye-laws are in force throughout the District, and their enforcement is entrusted to Mr. W. Webb-Shennan, Building Surveyor. He reports that, during 1904, plans for 127 new houses were approved, and 67 houses were completed.

Factory and Workshop Act.—Mr. Shennan is also Inspector under this Act. He reports that the 16 workshops on the register have been inspected during the year. In all, defects were found in 7 workshops. Notices were accordingly served, and these have been complied with.

Inspector's Report.—Mr. Wallis continues to give great attention to his duties, which in addition to the more ordinary work include the care of the sewers, and the flushing thereof, and the supervision of the contractors who remove the ashpit refuse. Mr. Wallis reports that he has received 66 complaints of nuisances during the year, and that he has inspected 1,425 houses, premises, etc., and re-inspected 319. He has served 93 notices for the amendments of sanitary defects. There were 72 houses in which the drains were put in order, 10 old houses newly supplied with water, 6 cases of nuisance from overcrowding of dwelling-houses dealt with, and 2 privies converted into water-closets.

Dairies, &c.—Mr. Wallis has under inspection 251 dairies and cowsheds. These are systematically visited to see that they are kept clean and in repair, and that the limewashing is done in the Spring and Autumn.

Slaughter-houses.—There are 6 in the District, which all have the attention of the Inspector.

Mr. Wallis notes that since Whitby (including Ellesmere Port) ceased to be a part of Wirral Rural District, he has had no Canal Boats to inspect.

Administrative County of Chester.

APPENDIX OF STATISTICS

FOR 1904.

TABLE I.—Population, Area, Births, Deaths, &c.—

Showing enumerated and estimated population, area, persons per acre, births and deaths, birth-rates and death-rates, deaths at various ages, proportion of deaths of infants to births, deaths from seven principal zymotic diseases, and corresponding death rates.

TABLE II.—Mortality—

Showing deaths from certain causes and all causes, classified according to Diseases, Ages, and Localities.

SUPPLEMENT TO TABLE II.—Infantile Mortality—

Showing deaths from stated causes, in Weeks and Months under one Year of Age. (This is Table V, required by the Local Government Board to be filled in by Medical Officers of Health, and appended to their Annual Reports, for the first time in 1905.)

TABLE III.—Infectious Disease—

Showing new cases notified, and new cases removed to Hospital, classified according to Diseases and Localities, and giving particulars as to Isolation Hospital Provision.

NOTE.—The information in these Tables is derived from the returns made by the district Medical Officers of Health on Forms supplied to them by the Local Government Board. The proportion of persons per acre, the deaths from the seven principal zymotic diseases and corresponding death rates, have been added. The population in 1901 and the areas are from the full Report of the Census of the County of Chester, the summary to which is dated August 10th, 1902.

TABLE I.—POPULATION, AREA, BIRTHS, DEATHS, &c.

Showing enumerated and estimated population, area, persons per acre, births and deaths, birth-rates and death-rates, deaths at various ages, proportion of deaths of infants to births, deaths from 7 principal zymotic diseases, & corresponding death-rates.

SANITARY DISTRICTS.	Population at Census, 1901	Estimated Population at middle of 1905.	Area in Acres.	Persons to an Acre.	Births.	Birth-rate per 1000 Living.	Deaths.	Death-rate per 1000 Living.	Deaths from All Causes at subjoined Ages. under 1 Year	1 and under 5	5 and under 15	15 and under 25	25 and under 65	65 and upwards.	Deaths under 1 Year to 1000 births.	Deaths from seven principal Zymotic Diseases.	Principal Zymotic Diseases Death-rate
MUNICIPAL BOROUGHS.																	
Congleton	10707	10707	2372	·16	349	23·1	184	17·1	44	23	4	1	57	55	131	14	1·3
Crewe	42074	40578	2185	21·31	1318	28·2	629	13·5	173	62	22	28	177	137	131	78	1·6
Dukinfield ...	18920	19500	1405	13·88	463	23·7	310	16·3	91	38	13	11	103	53	196	29	1·5
Hyde	32766	33806	3081	10·99	797	22·3	604	17·8	145	71	30	22	199	137	191	72	2·1
Macclesfield ...	34624	34624	3214	10·77	751	21·6	628	18·1	112	53	18	28	211	206	149	56	1·6
Stalybridge ...	27073	28636	3180	9·15	712	24·8	489	17·0	126	64	10	13	175	101	177	57	1·3
	166773	173911	15537	11·15	4250	24·4	2853	16·	691	341	97	103	922	699	163	280	1·6
OTHER URBAN DISTRICTS.																	
Alderley Edge	3850	3900	599	5·00	60	20·0	34	11·3	1	2	1	..	13	17	16	1	0·3
Alsager	2597	2750	2211	1·22	72	26·2	29	10·5	7	...	3	2	7	8	97	0	·0
Altrincham ...	16831	17818	662	26·91	473	26·5	213	11·9	55	21	9	10	76	43	116	18	1·0
Ashton-upon-Mersey ...	5563	5000	1622	3·63	142	24·0	59	10·0	15	3	...	3	29	9	105	3	0·5
Higher Bebington ...	1540	1588	699	2·27	53	33·4	30	18·9	8	3	2	3	9	10	56	2	1·2
Lower Bebington ...	8708	9670	1051	9·20	339	35·0	119	12·3	33	13	5	7	37	24	92	11	1·1
Bollington	5245	5245	1291	4·06	91	17·3	62	11·8	13	6	2	..	23	19	127	1	0·2
Bowdon	5788	5800	850	3·29	27	9·6	10	0·8	1	..	...	1	11	6	37	0	·0
Bredbury and Romiley ...	7185	7968	3986	1·99	160	20·0	98	12·3	22	4	...	4	36	32	137	1	0·1
Bromborough	1691	1983	1678	1·16	43	21·7	23	11·6	4	2	1	1	7	8	53	2	1·0
Buglawton	1452	1452	2911	0·40	51	35·1	28	19·2	13	4	1	1	3	6	254	5	3·4
Cheadle and Gatley ...	7916	8840	5083	1·73	157	19·9	97	12·3	17	5	6	5	40	24	108	4	0·4
Compstall	875	893	903	0·97	28	29·3	13	14·7	4	..	..	1	2	6	173	1	1·1
Ellesmere Port & Whitby	4082	4700	1261	3·72	159	33·3	57	12·1	20	3	1	3	21	4	126	4	0·8
Hale	4562	6736	1288	5·22	128	19·0	65	9·6	13	5	1	2	29	15	101	4	0·6
Handforth	911	921	1312	0·70	21	23·8	10	10·8	1	..	...	...	4	5	95	0	·0
Hazel Grove and Bramhall	7934	9083	5488	1·66	155	17·0	119	13·1	13	9	6	7	46	38	83	2	0·2
Hollingworth	2417	2800	2063	1·34	69	24·6	28	9·9	9	...	2	2	6	7	130	2	0·7
Hoole	5509	5509	334	16·46	156	26·9	59	11·6	13	8	6	1	18	13	94	6	1·1
Hoylake and West Kirby...	10911	12057	2068	5·12	276	21·8	140	11·8	23	11	6	10	57	42	83	10	0·8
Knutsford	5172	5795	1760	3·27	128	23·8	66	13·5	12	6	...	2	23	23	103	4	0·8
Lymm	4707	4900	1372	1·12	109	22·2	63	12·8	7	2	5	1	20	28	64	4	0·8
Marple	5525	5700	3054	1·85	106	18·6	78	13·6	16	6	2	3	29	22	151	3	0·5
Middlewich	4969	4850	1032	4·81	107	21·4	78	16·1	20	13	8	3	17	17	120	17	3·0
Mottram	3128	3128	1084	2·88	66	21·1	38	12·1	8	5	3	2	11	0	121	5	1·6
Nantwich	7722	7812	703	11·15	217	27·6	127	16·1	32	14	3	4	35	39	147	16	2·0
Neston and Parkgate ...	4154	4386	3267	1·34	111	25·3	54	12·3	12	5	5	1	14	17	108	4	0·9
Northwich	17611	18750	1397	13·42	519	27·6	244	13·0	60	18	11	19	78	58	115	18	0·9
Runcorn	16491	17400	1275	13·64	543	31·5	286	16·4	68	30	14	12	97	67	120	19	1·1
Sale	12088	14000	2006	6·97	314	22·4	192	13·7	42	21	8	6	73	47	133	21	1·5
Sandbach	5558	5558	2694	2·06	153	27·5	80	14·3	17	3	3	4	26	27	111	1	0·2
Tarporley	2644	2620	6195	0·42	61	23·3	33	12·6	3	...	...	1	13	16	49	0	·0
Wallasey	53570	58500	3043	17·47	1657	28·3	772	13·2	163	81	24	27	296	181	98	66	1·1
Wilmslow	7361	7800	5000	1·53	156	20·0	102	13·0	13	6	1	...	36	46	83	5	0·7
Winsford	10382	10395	5780	1·79	313	30·2	156	15·1	56	23	2	9	37	40	115	29	2·8
Yeardsley-cum-Whaley ...	1487	1530	1323	1·15	41	26·9	24	15·6	3	1	2	...	7	11	73	0	·0
	263673	285365	81805	3·48	7325	25·7	3702	12·9	780	338	139	157	1286	993	107	290	1·0
RURAL DISTRICTS.																	
Bucklow	19830	21145	57651	0·36	415	19·6	254	12·0	41	18	14	9	90	82	99	21	0·9
Chester	10989	11287	35517	0·31	223	19·7	114	10·1	18	9	3	3	40	41	81	5	0·4
Congleton	12220	12220	30152	0·40	344	28·1	145	11·8	27	7	2	6	41	62	78	6	0·5
Disley	2827	3100	2166	1·25	61	19·7	44	14·1	5	2	2	2	15	18	82	1	0·3
Macclesfield	15776	16108	79572	0·20	349	21·2	250	15·2	56	12	4	14	94	90	103	3	0·2
Malpas	4488	4436	21406	0·20	105	23·7	57	12·8	5	1	1	2	24	24	47	0	·0
Nantwich	23107	23376	98466	0·23	589	25·1	285	12·1	52	14	11	17	84	107	88	24	1·0
Northwich	22073	23409	51310	0·43	567	24·2	318	13·5	63	31	16	9	97	102	111	25	1·0
Runcorn	23244	24416	49153	0·49	608	24·9	312	12·7	75	17	5	17	89	109	123	10	0·6
Tarvin	12214	12558	56874	0·22	282	22·5	158	12·6	16	8	9	7	56	62	56	7	0·5
Tintwistle	2105	2095	13821	0·15	48	22·9	33	15·7	9	3	...	2	7	12	187	0	·0
Wirral	14017	15590	87594	0·41	370	23·8	172	11·1	31	15	8	9	41	68	83	9	0·5
	163439	169941	546788	0·31	3960	23·3	2442	12·6	378	157	75	97	678	777	95	117	0·7
Administrative County	593885	629217	644180	0·97	15535	24·7	8997	13·6	1858	816	311	357	2886	2469	119	693	1·1

SUPPLEMENT TO TABLE II.

(Local Government Board Table V.)

INFANTILE MORTALITY DURING THE YEAR 1905.

IN THE ADMINISTRATIVE COUNTY OF CHESTER.

Deaths from stated Causes in Weeks and Months under One Year of Age.

CAUSE OF DEATH.		Under 1 Week.	1—2 Weeks.	2—3 Weeks.	3—4 Weeks.	Total under 1 Month.	1—2 Months.	2—3 Months.	3—4 Months.	4—5 Months.	5—6 Months.	6—7 Months.	7—8 Months.	8—9 Months.	9—10 Months.	10—11 Months.	11—12 Months.	Total Deaths under One Year.
All Causes.	Certified	377	61	73	69	580	208	152	135	116	99	113	80	88	80	63	102	1826
	Uncertified ...	15	...	...	1	16	3	2	2	1	2	1	...	1	1	1	2	32
Common Infectious Diseases	Small-pox	...	...	...			...	...	..			..	..	..	...	..	..	
	Chicken-pox ..	...	...	...	..		...	...	..		...	...	...	...	...	..	..	
	Measles ...	.	...	...	.	.	1	...	...	1	1	4	7	7	9	5	6	41
	Scarlet Fever	...	...	...	...			...	...	...	...	1	...	...	...	1	1	3
	Diphtheria: Croup	..	...	...	1	1	.	...	...	...	...	...	...	1	1	2	...	5
	Whooping Cough	...	...	...	...		4	7	4	1	4	3	5	8	9	5	5	55
Diarrhœal Diseases.	Diarrhœa, all forms	..	3	2	5	10	19	22	13	14	15	18	9	10	6	12	21	169
	Enteritis (*not Tuberculous*)	1	...	2	5	8	13	5	14	11	7	7	3	4	4	...	1	77
	Gastritis, Gastro-intestinal Catarrh		1	4	1	6	8	5	2	9	4	4	...	1	2	1	1	43
Wasting Diseases.	Premature Birth ...	241	11	8	6	266	14	4	2	1	1	...	3	..	1	2	...	294
	Congenital Defects ..	18	5	6	1	30	4	4	1	1	4	3	...	...	...	...	...	47
	Injury at Birth ...	11	...	..		11	..	...	...	...	...	...	...	...	...	...	...	11
	Want of Breast-milk	..	...	...	..			...	.	...	...	...	...	...	...	...	...	.
	Atrophy, Debility, Marasmus	34	19	15	18	86	54	40	33	20	8	11	7	4	5	5	2	275
Tuberculous Diseases.	Tuberculous Meningitis...	1	...	...		1	1	2	4	2	2	6	2	2	4	4	3	33
	Tuberculous Peritonitis: Tabes Mesenterica	.	...	1	1	2	3	4	8	..	2	2	3	1	1	6	4	36
	Other Tuberculous Diseases	..	...	...	1	1	4	3	3	5	3	2	2	3	4	...	1	31
	Erysipelas	.	2	...	...	2	...	...	...	2	1	..	...	...	...	...	.	5
	Syphilis	.	..	1	...	1	11	4	3	2	1	2	...	...		...	...	24
	Rickets		...	...	...			..	...	1	...	.	1	..		...	1	3
	Meningitis (*not Tuberculous*)		...	1	...	1	1	...	1	3	1	8	5	7	...	2	2	31
	Convulsions	22	7	11	7	47	23	13	17	11	14	12	2	6	9	3	5	162
	Bronchitis .	..	1	1	6	8	16	14	10	9	6	5	8	6	7	5	26	120
	Laryngitis .	1	...	...	..	1	1	2	...	...	1	...	7	3	2	...	..	17
	Pneumonia .	1	...	2	3	6	9	6	10	9	10	13	8	17	12	9	14	123
	Suffocation, overlaying..	4	..	1	3	8	3	3	2	...	1	2	...	1	...	...	...	20
	Other Causes .	58	12	18	12	100	22	16	10	15	15	11	8	8	15	2	11	233
		392	61	73	70	596	211	151	137	117	101	114	80	89	91	64	104	1838

Births in 1905—15,535.

Deaths from all causes at all ages in 1905—8,697.

Population estimated to middle of 1905—629,217.

TABLE II.—MORTALITY.

Showing deaths from subjoined causes during the year ending December 31st, 1905, classified according to Diseases, Ages and Localities.

DISEASES.	Small-pox.	Measles.	Scarlet Fever.	Whooping cough.	Diphtheria and Membranous Croup.	Croup.	Typhus Fever.	Enteric Fever.	Other Continued Fever.	Epidemic Influenza.	Cholera.	Plague.	Diarrhœa.	Enteritis.	Puerperal Fever.	Erysipelas.	Other Septic Diseases.	Phthisis.	Other Tubercular Diseases.	Cancer, Malignant Disease.	Bronchitis.	Pneumonia.	Pleurisy.	Other Diseases of Respiratory Organs.	Alcoholism, Cirrhosis of Liver.	Venereal Diseases.	Premature Birth.	Diseases and Accidents of Parturition.	Heart Diseases.	Accidents.	Suicides.	All other Causes.	All Causes.
AGES AT DEATH.																																	
Under 1 year	...	41	3	55	5	...	...	..	..	1	...	...	169	112	...	5	3	...	100	1	123	123	6	21	..	24	234	.	14	17	..	744	1858
1 year and under 5 years	...	94	39	40	50	4		2	1	5	...	...	30	22	..	...	1	7	84	...	70	132	2	18	..	2	...	..	2	23	.	174	816
5 years and under 15 years	...	7	13	6	38	2	..	8		1	..	..	4	9	..	1	4	17	38	2	4	22		3	..	...		...	21	27	..	84	311
15 years and under 25 years	...		..	.	2			14	...	5	..	...		3	12	3	4	65	19	3	8	32	2	3	4	...	.	6	26	28	8	90	337
25 years and under 65 years	1	..	3		2		...	35	1	51	1	..	8	19	18	5	15	350	50	297	172	225	2	30	75	1	...	51	444	96	52	882	2835
65 years and upwards	1	.	..	..	.	...	.	1	...	33		...	11	8	..	7	1	21	6	185	290	119	7	16	25	1	.		356	51	9	1321	2469
All ages	2	142	58	101	106	6	...	60	2	96	1	.	222	173	30	21	28	480	297	488	664	653	19	91	104	28	294	57	863	247	69	3295	8697
SANITARY DISTRICTS.																																	
Municipal Boroughs.																																	
Congleton	...	11	1	1	..		.	1	..	3	...	...	.	4	1	.	..	5	8	13	17	22	.	1	.	...	14	..	15	1	3	63	184
Crewe	...	22	4	23	4	.	..	4	..	10	...	...	16	11	5	1	2	24	44	28	38	25	4	41	5	4	23	6	60	9	3	208	629
Dukinfield	...	10	3	1	1		..	7	..	4	...	...	7	15	1	.	5	11	17	15	31	27	3	2	3	1	11		24	4		113	319
Hyde	...	22	10	6	10	1	..	12	..	5	...	..	12	10	6	1	..	44	15	30	48	46	1	...	3	2	13	6	55	14	5	227	604
Macclesfield	1	1	7	18	6				.		...	..	23	6	..	3	8	41	25	53	40	39	..	3	7	8	23	.	64	10	3	228	623
Stalybridge	.	9	2	11	6		.	4	..	.	.	.	5	16	2		1	27	9	23	62	43	1	5	5	..	13	3	44	6	3	189	489
	1	75	27	65	27	1	...	28		33	.	.	63	62	15	5	16	152	118	162	236	202	9	53	23	15	100	15	262	44	17	1028	2853
Other Urban Districts.																																	
Alderley Edge	..	..	...		1	..		...	..	...	.	...	...	...	...	...	...	2	1	3	1	...	..	..	..	..	...	...	8	.	..	18	34
Alsager	...	...	...		.	...	..	..	..	...	.	...	...	...	1	1	..	1	2	2	1	2	5	...	...	...	3	...	2	..	.	9	29
Altrincham	.	1	...		2		..	4	.	2	..	.	11	3		.	...	17	4	10	17	18	...	...	...	3	...	7	2	18	6	4	84	213
Ashton-upon-Mersey	.	.	...		1			1	...		.	.	1	..	.	.	...	1	1	2	9	5	...	...	...	...	1	2	.	5		...	30	59
Higher Bebington	..	1	...				...	.	.	...	.	.	1	1	.	.	...	6	1	.	3	3	...	.	...	..				2	1	...	11	30
Lower Bebington	..	4	1	2	2		..	.	..	...	.	..	2	3	1	...	.	6	3	5	2	11	1	..	4		3	2	11	3	1	51	119
Bollington	...	..	...		1	..	..	.	..	.	.	..	.	4	.	.	.	1	8	2	4	1	..	..	1		2		12	2		23	62
Bowdon	...	..	.		1	...	..	.	..	.	.	..	.	1	.	.	.	1	...	1	.	2	..	..	.				5	...	..	9	19
Brealbury and Romiley	...	...	.		.	..	..	...	..	...	...	..	.	.	.	1	.	6	6	3	9	7	.	.	2		4		11	5	9	32	98
Bromborough	.	.	..		1		..	...	..	...	...	..	1	..	..	..	..	1	1		2	1	..	..			4	..	1	3	1	7	23
Bugbawton	..	3	..	2	..		..	..	..	...	...	..	..	2	1	1	2	4	2	1	2	4	..	..			5	1	1	...	...	5	23
Chendle and Golley	..	..	2	...	1		..	..	1	...	...	..	1	5	..	..	..	1	2	3	4	12	9	1	1	2		8	..	5	4	2	32	97
Compstall	.	..	..		.		..	..	1	...	...	...	..	1	5	.	.	.	2	1	1	..	.	..	..		...	1	...	1	...	...	4	13
Ellesmere Port and Whitby	..	1	1		...	...	...	1	..	1	1	.	2	2	...	.	..	2	...	..	1	...	..	..	2	...	6		.	3	1	26	57
Hale	..	..			1	...	..	..	..	..	..	..	...	.	..	...	..	2	...	2	2	4	..	2		..	3	2	5	1	2	24	65
Haudforth	...	..			..	..	..	..	..	..	..	..	..	5	..	..	..	3	2	3	4	7	...	..	2	..	..	..	1	..	...	6	10
Hazel Grove and Bramhall	1	...			1			...		...			1	1	1	.	..	1	...	..	1	...	...	..	1	..	..	...	13	4	.	34	119
Hollingworth	..				1								1	1	..	.	..	8	12	7	11	17	...	..	3		1	2	13	4	.	12	26
Hoole	...	2									1		4	1	..			2	..	1	2	1	...	1			1	..	..	2	..		29	59
Hoylake and West Kirby	.	1	2	3						1	4		3	...	..	..	..	9	..	2	.	6	..	..			2	..	3	.	.	29	66
Knutsford	..			3							.		1	1	1	...	.	3	4	6	8	15	..	.	3	.	3	.	12	2	1	66	149
Lymm	..	..	1		1			4			1	..	2	.	.	.	...	15	4	6	8	15	..	.	.		3	1	6	6	1	24	66
Marple	.	2	.		1						2	...	4	.	.	.	1	3	.	5	7	2	1	..	.		4	1	6	6	1	24	66
Middlewich	.	1	.	1	11								1	...	1	...	.	4	4	8	3	2	.	.	3		2	...	5	4	1	19	63
Mottram	...	.	.	.	4								8	1	1	2		2	3	7	8	5	..	..	.		2	...	6	...	2	39	78
Nantwich	.	7	.	1	.								1	...	.	.	...	2	2	4	6	..	..	.	1	.	2	..	10	4	1	24	78
Neston and Parkgate	..	...	3	..	.								15	9	1	..	5	1	2	3	2	3	..		.		3	..	5	.	.	12	38
Northwich	.		..	.	3	1	..	...	5	...	2	..	7	12	2			2	2	3	2	3	..				3	..	5	.	.	45	127
Runcorn	...		.	3	4	2	..	...	1	2	...	..	10	..	.	.	...	8	1	1	2						1	..	2	..	2	23	54
Sale	..	1	.	5	2	.	...	...	...	...	1	..	.	...	.	.	...	8	2	13	12	6	..	..	2	1	2	...	11	3	2	45	127
Sandbach	..	1	.	...	.	...	...	...	...	...	.	..	...	1	..	...	...	3	...	3	4	5	..	..	...		...	.	7	1	...	23	54
Tarporley	..	.	1	.	.	.	.	.	.	.	.	..	39	17	..	7	.	43	13	56	44	70	2	15	5	3	29	4	31	35	3	271	772
Wallasey	.	1	6	2	10	.	.	8	.	.	8	..	1	.	.	1	.	6	...	6	9	10	.		1	.	..	1	16	5	...	39	102
Wilmslow	.	2	1	1	1	.	.	.	.	.	2	..	6	...	1	2	..	5	5	7	13	9	1	2	4	1	10	2	14	4	..	46	156
Winsford	..	21	1	1	...	...	...	...	...	...	1	..	...	...	...	...	...	...	1	2	4	1	...	...	.	..	1		4	1	.	10	24
Yeardsley-cum-Whaley	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	1	49	18	25	48	3	.	23	2	43	1	...	123	78	11	14	7	208	123	200	266	298	6	25	47	9	135	27	361	127	33	1390	3702
Rural Districts.																																	
Bucklow	..	5	4	1	4	..	...	1	...	7	..	...	6	8	.	...	2	12	7	30	22	15	1	1	7	..	8	..	29	11	6	67	254
Chester	..	1	2	..	..	..	...	1	...	1	..	...	1	5	..	...	...	3	...	8	6	11	..	1	4	...	7	..	15	5	.	43	114
Congleton	...	1	1	..	1	...	...	...	...	...	...	...	3	2	.	...	...	5	7	11	11	10	..	..	3	1	5	3	16	9		66	145
Dieley	..	..	..	..	1	..	..	...	..	...	..	..	..	...	.	...	...	.	.	3	6	5	..	1	3	...	1		4	2	.	18	44
Macclesfield	..	..	1	...	1	..	...	1	..	2	..	..	..	4	..	...	...	10	11	18	20	20	...	.	2		6	2	27	2	2	121	250
Malpas	...	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	5	.	4	2	6			1		1		9	1		27	57
Nantwich		3	1	6	4		..	1	..	1	..	..	10	.	1	.	.	19	3	8	25	16	..	3	2		3	5	41	12	3	119	285
Northwich		5	.	3	10	1	..	2		3	..	..	5	3	2	1	2	18	11	14	23	24	..	2	2	2	14	1	28	12	2	123	318
Runcorn		..	1	..	5	1	..	3		.	..	..	7	3			1	20	11	8	23	20	1	6	6	1	7	3	29	11	2	142	312
Tarvin	..	1	..	..	4	1	..	.		.	..	..	2	3	...	...	1	11	2	10	9	7	1		3	.	2	1	22	4	2	68	158
Tintwistle		..			..								..	2	1	...		3	3	...	3	.	...	...			1	.	3	1	2	14	33
Wirral	.	2	3		1	...	...	1	.	.	.	.	2	2	...			14	1	12	12	19	1				1	.	4	.		74	172
	...	18	13	10	31	2	...	9	...	20	.	...	36	33	4	2	5	120	56	126	162	153	4	14	34	4	59	15	240	76	19	877	2142
Administrative County	2	142	58	101	106	6	..	60	2	96	1	...	222	173	30	21	28	480	297	488	664	653	19	91	104	28	294	57	863	247	69	3295	8697